

# **Proposed Final Outer Continental Shelf Oil and Gas Leasing Program for 1997-2002**

August 1996

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## ABBREVIATIONS

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ADV	-	Adjusted Delayed Value
AEDP	-	Area Evaluation and Decision Process
AEOT	-	Average Evaluation of Tract
AEWC	-	Alaska Eskimo Whaling Commission
AMCC	-	Alaska Marine Conservation Council
AOGA	-	Alaska Oil and Gas Association
API	-	American Petroleum Institute
bbl	-	Barrel
BBO	-	Billion barrels of oil
BBOE	-	Billion barrels of oil equivalent
Btu	-	British thermal unit
COOGER	-	California Offshore Oil and Gas Energy Resources Study
CZM	-	Coastal Zone Management
CZMA	-	Coastal Zone Management Act
DMROV	-	Delayed Mean Range of Values
DOE	-	Department of Energy
DOI	-	Department of the Interior
EEZ	-	Exclusive Economic Zone
EIS	-	Environmental Impact Statement
EPA	-	Environmental Protection Agency
ESPIS	-	Environmental Studies Program Information System
FMV	-	Fair market value
FR	-	Federal Register
FWS	-	Fish and Wildlife Service
FY	-	Fiscal Year
GAEOT	-	Geometric Average Evaluation of the Tract
GRASP	-	Geologic Resource Assessment Program
IPAA	-	Independent Petroleum Association of America
Mcf	-	Thousand cubic feet
MMS	-	Minerals Management Service
MROV	-	Mean Range of Values
NAS	-	National Academy of Sciences
NASA	-	National Aeronautics and Space Administration
NEPA	-	National Environmental Policy Act
NEV	-	Net Economic Value
NOAA	-	National Oceanic and Atmospheric Administration
NOIA	-	National Ocean Industries Association
NRC	-	National Research Council
NRDC	-	Natural Resources Defense Council
OCS	-	Outer Continental Shelf
OCSLA	-	Outer Continental Shelf Lands Act
OPD	-	Official protraction diagram
PRASS	-	Petroleum Resources Appraisal Systems Software
PRESTO	-	Probabilistic Resource Estimates-Offshore
SID	-	Secretarial Issue Document
Tcf	-	Trillion cubic feet

# I. SUMMARY OF DECISION—PROPOSED FINAL 5-YEAR PROGRAM FOR 1997-2002

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## A. Introduction

Management of the Nation's offshore oil and gas resources is governed by the Outer Continental Shelf (OCS) Lands Act, which specifies the conditions under which the Secretary of the Interior grants rights to explore for, develop, and produce those resources. The Secretary has assigned the responsibility for implementing the basic requirements of the OCS Lands Act to the Minerals Management Service (MMS). The Act requires the Secretary to prepare an oil and gas leasing program that indicates a 5-year schedule of lease sales that he determines best meets the Nation's energy needs.

Section 18 of the Act requires that the 5-year program be prepared in a manner consistent with four main principles: (1) consideration of economic, social, and environmental values and the potential impact on marine, coastal, and human environments; (2) a proper balance among potential for environmental damage, discovery of oil and gas, and adverse impact on the coastal zone; (3) assurance of receiving fair market value; and (4) consideration of eight factors. These factors are (a) existing information on geographical, geological, and ecological characteristics of regions; (b) equitable sharing of developmental benefits and environmental risks among regions; (c) location of regions with respect to needs of energy markets; (d) location of regions with respect to other uses of the sea and seabed; (e) interest of potential oil and gas producers; (f) laws, goals, and policies of affected States; (g) relative environmental sensitivity and marine productivity; and (h) relevant environmental and predictive information. There is no set equation for the weight to be accorded each principle and factor, and it is within the Secretary's discretion after considering these matters to determine how best to proceed under the OCS Lands Act.

Release of the Proposed Final Program is the next-to-last step in the development of the 5-year program for 1997-2002. The Proposed Final Program and the analyses supporting it have been developed over a period of almost 2 years, beginning with an initial request for comments published in the *Federal Register* on November 16, 1994. The request for comments was followed by the Draft Proposed Program in July 1995 and the Proposed Program and draft Environmental Impact Statement (EIS) in February 1996. Each draft was preceded by consideration of comments, consultation with interested parties, and extensive analyses. Hearings on the draft EIS were held in seven locations, with teleconferencing to five remote locations in Alaska. During the preparation of the program, a new National Assessment of hydrocarbon resources also was completed, providing the latest estimates of undiscovered oil and natural gas resources on the OCS. These new estimates have been incorporated in the analysis.

The 5-year oil and gas program process and decisions fulfill both the letter and the spirit of section 18 of the OCS Lands Act by providing for environmentally responsible oil and gas leasing in selected prospective areas of the OCS where it appears there is sufficient industry interest, where neither the laws and policies of adjacent States and localities nor other uses of the sea and seabed are significant impediments to OCS program activity, and where there is agreement among interested and affected parties that

consideration of leasing is reasonable within the 1997-2002 timeframe. Consensus-based decisionmaking, science-based decisionmaking, and the use of natural gas as an environmentally preferred fuel are policy objectives endorsed by the President and the Secretary that this program also strives to achieve.

## **B. New Approach to Decision-making**

The Department of the Interior's (DOI) emphasis on consultation and cooperation is reflected in the Proposed Final Program. This program is unique in its development from the bottom up and its grounding in the principle of working in partnership with affected parties to develop a reliable schedule of lease offerings so that the new program can serve as a framework for collaboration among parties. The Secretary has decided, for this program, to give greater weight to the following two OCS Lands Act section 18 criteria: (1) laws, goals, and policies of affected States and (2) location of regions with respect to other uses of the sea and seabed. He has concluded that any lesser weighting of these latter two criteria at this time would be counterproductive to long-term development of the OCS.

As part of the effort to develop a reliable schedule that can best meet the Nation's energy needs while not compromising other national needs and priorities as set forth in the OCS Lands Act, this program embraces the advice provided by the OCS Policy Committee, an independent body that advises the Secretary of the Interior. The Policy Committee's Subcommittee on OCS Legislation recommended that the Secretary, where local constituents were willing, use regional task forces representing all OCS program stakeholders to focus more on reaching consensus on OCS lease sales. Consistent with the Policy Committee's recommendation, the Alaska Regional Stakeholders Task Force was established to advise the Secretary on the Alaska OCS component of this 5-year program. The Task Force consisted of representatives of Federal, State, and local governments; Native, commercial fishing, subsistence, and environmental interests; industry and development communities; and coastal districts. The Task Force's report for the Policy Committee to the Secretary recommended five planning areas for leasing consideration. (A Task Force member from Greenpeace submitted as a supplement to the Task Force report a minority report stating that the majority report did not accurately reflect the high level of concern and strong opposition to OCS activity expressed by coastal residents throughout Alaska.) The Proposed Final Program is consistent with the recommendations of this Task Force.

Since the release of the Proposed Program, the Alaska Regional Stakeholders Task Force has endorsed its original recommendations on the 5-year program and identified the following three additional recommendations: (1) continue MMS efforts to incorporate traditional knowledge and expand analyses of effects to marine mammals, (2) continue to review existing spill prevention and response technology and develop incentives to encourage improvements where necessary, and (3) review existing mechanisms to compensate communities in the event of an oil spill and make recommendations for changes in law or regulations as necessary to expedite compensation. The MMS modified the final Environmental Impact Statement (EIS) for the 5-year program to incorporate traditional knowledge and expand discussions on marine mammal effects for proposed Alaska sale areas similar to changes made to the final EIS for Beaufort Sea Sale 144 as a result of the same type of concerns. Review and assessment of prevention and response technologies, industry operating practices, and level of compliance with requirements is a continuous process within MMS. The



MMS revises regulatory requirements as necessary to recognize changes and advancements in technology, practices, and compliance. Through cooperative research, professional and trade forums, and through the MMS regulatory and enforcement program, the MMS also identifies and applies incentives for improvements in technology and operating practices. While legal and regulatory mechanisms for compensation for damages due to oil spills are beyond the jurisdiction of the MMS, the MMS will alert those agencies with authorities on these issues and offer to work with these authorities to identify and develop solutions.

The OCS Policy Committee and the OCS Scientific Committee of the Minerals Management Advisory Board also established a Joint Subcommittee on Environmental Information for Select OCS Areas Under Moratoria to conduct an independent review and evaluation of areas under legislative and executive moratoria. The Subcommittee will assess environmental information and studies requirements in light of budgetary constraints, offshore oil and gas state-of-the-art technology, the offshore industry's environmental record, industry interest, and the nature of the potential hydrocarbon resources in the areas under review. The Subcommittee is focusing on issues for consideration in future programs and is expected to issue its report, which must be approved by both the Policy and Scientific Committees, in mid-1997.

### **C. Context of the Proposed Final Program Decision**

The development of this 5-year program considers, among other factors, competing uses of the OCS sea and seabed and the priorities States have accorded other uses of the resources in their coastal environments, as well as short-term and long-term national energy needs. Among the other uses analyzed are tourism and recreation, commercial fishing, vessel traffic, protection and preservation of marine and coastal resources in areas such as parks and sanctuaries, traditional hunting and fishing activities and subsistence lifestyles (by Alaska Natives), and nonenergy marine mineral development. Each OCS region faces a unique combination of such uses and of priorities placed upon them by adjacent States.

Analyses prepared for the Proposed Final Program showed that much of the Nation's energy for the foreseeable future will have to come from petroleum and that imports of crude oil, petroleum products, and natural gas all are expected to increase considerably over the next two to three decades. Increasing imports will make the Nation more vulnerable to supply disruptions and increase the Nation's balance of payments deficit.

Environmentally responsible development of OCS oil and gas resources will have to play a role in any effort to slow the increase in imported energy. Currently, the OCS accounts for about one-fourth of U.S. natural gas production and one-sixth of oil production. The undiscovered OCS resource base has the potential to make an even greater contribution to U.S. energy supplies in the long run. The OCS is believed to hold one-half of the undiscovered, conventionally recoverable oil and gas resources estimated to remain in this country. The MMS investigation of energy alternatives and market responses to a curtailment of OCS oil and gas leasing indicated that, in the long run, 86 percent of a loss of OCS oil production and 34 percent of reduced OCS gas production (on a Btu basis) would be replaced by oil imports.

The National Energy Policy Plan, entitled *Sustainable Energy Strategy*, presents the Clinton Administration's energy policy. The concept of sustainable development guides the energy policy process and motivates three strategic goals:

- ! Maximize energy productivity to strengthen the economy and improve living standards;
- ! Prevent pollution to reduce the adverse environmental impacts associated with energy production, delivery, and use; and
- ! Keep America secure by reducing vulnerability to global energy market shocks.

The environmentally sound development of the Nation's OCS resources, through a reliable lease sale schedule that is consistent with other uses of the OCS sea and seabed and with State and local government priorities, can help further the achievement of each goal.

Investments in and production of OCS oil and gas generate billions of dollars annually in bonuses, royalties, and taxes and create thousands of well-paying jobs throughout the American economy. Production of offshore resources under proper environmental safeguards poses less risk of major oil spills than does importing foreign oil in tankers. Expanded use of natural gas, including that produced on the OCS, has substantial environmental benefits over other fossil fuels.

While continued dependence on imported oil has national security implications, it is important to take a long-term view of this problem. First, even an aggressive lease sale schedule cannot eliminate the Nation's dependence on imported oil; effective use of OCS resources can only be one part of an overall approach. Second, aggressive scheduling of lease sales may actually result in reduced production if it ignores State and local concerns and provokes stronger opposition than would occur in response to a more cautious approach. Finally, the Nation will continue to need OCS resources well into the future, when low-cost oil supplies outside the control of the Organization of Petroleum Exporting Countries (OPEC) are expected to decline sharply. Currently the Nation benefits from relatively inexpensive oil imports from many producing nations, and this Administration's initiatives in brokering peace in the Middle East have produced positive results.

The Secretary has considered that his decision on the 5-year program for 1997-2002 will have a long-term effect on the success of this and future programs. Most production resulting from lease sales held under the new 5-year program is likely to begin over the first decade of the next century and continue for another 25 years. Just as important, the program decisions and the way they are made will have a lasting effect on the relationship between the Federal government and other interested parties and the ability to develop and implement future programs in a way that best meets the Nation's energy needs while protecting the values reflected in competing Federal, State, and local priorities.

**D. Proposed Final Program: Schedule of Lease Sales**

The options the Secretary has chosen for the Proposed Final Program are the same as those he chose for the February 1996 Proposed Program—except for the Beaufort Sea and Eastern Gulf of Mexico program areas, where he has chosen to modify the areas for leasing consideration. In the Beaufort Sea program area, the Secretary excluded the 416 blocks east of Barter Island that are farther from shore and encompass a major portion of the whale migration corridor. This would retain for leasing consideration a section of nearshore blocks that includes active OCS leases and is adjacent to State nearshore areas where future oil and gas sales are anticipated. The timing and location of the two lease sales proposed for the Beaufort Sea are summarized in table 1 and shown in map 1.

For the Eastern Gulf of Mexico, the Secretary decided to delete 22 whole or partial blocks within 15 miles of shore and add 384 deep-water blocks to the proposal. The nearshore deletion was requested by the Governor of Alabama, who stated in his July 30, 1996, letter that although there had been no measurable adverse impacts to the tourism industry on Alabama's Gulf coast directly attributable to the installation and operation of oil and gas exploration and production facilities in adjacent waters, he felt that this exclusion was necessary due to the widespread opposition of local residents, local governments, the local tourism industry, and the House of Representatives of the Alabama Legislature to the construction of any additional visible oil and gas structures. The 384-block addition was recommended by several industry commenters and would encompass all nearby existing deep-water leases in the Eastern Gulf. The Governor of Alabama recommended that the inclusion of these 384 blocks in the sale area be considered, and the addition would continue to recognize the Governor of Florida's request that no drilling occur within 100 miles of Florida's coast. The options selected for the Eastern Gulf of Mexico are summarized in table 1 and shown in map 2.

**Table 1.** Proposed Lease Sale Schedule

Region and Planning Area	Sale No.	Year	Proposed Activity
<b>Alaska</b>			
Beaufort Sea	170	1998	Small sale, focusing on nearshore blocks in center of program area (map 1)
	176	2000	Sale in program area (map 1)
Cook Inlet/Shelikof Strait	173	1999	Sale in program area (map 1)
Gulf of Alaska	179	2001	Sale in program area (map 1)
Chukchi Sea/Hope Basin	183	2002	Combined sale in program area (map 1)
<b>Gulf of Mexico</b>			
Western Gulf of Mexico	*	Annual	Sale in program area (map 2)
Central Gulf of Mexico	**	Annual	Sale in program area (map 2)

Eastern Gulf of Mexico	181	2001	Sale in program area (map 2) (15 miles off Alabama, 100 miles off Florida)
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\* Sale No. 168, 171, 174, 177, and 180

\*\* Sale No. 169, 172, 175, 178, and 182

## Alaska Region

The Proposed Final Program for 1997-2002 includes lease offerings in 5 of the 15 Alaska OCS planning areas—Beaufort Sea, Cook Inlet/Shelikof Strait, Gulf of Alaska, Chukchi Sea, and Hope Basin. Although there has been no production from the Alaska OCS, there is considerable production from State onshore and offshore fields adjacent to some OCS sale areas, and industry is pursuing development of new discoveries. If they are indeed hydrocarbon prone, prospects in the Beaufort Sea and Chukchi Sea Planning Areas could hold vast quantities of oil. There is production from State lands and waters adjacent to the Beaufort Sea Planning Area, and the State of Alaska has plans for more leasing in State waters. During the last few years, it has held sales in Cook Inlet and the Beaufort Sea that included both onshore and offshore lands. There is industry interest in the Gulf of Alaska and in Cook Inlet. The State has opened the Yakutat area in the Gulf of Alaska for exploration licensing and has planned two lease sales for State waters in Cook Inlet. Hope Basin is not prospective by itself, but there may be interest in portions of the planning area in a combined sale with the Chukchi Sea Planning Area. These five planning areas were recommended for further consideration by the Alaska Regional Stakeholders Task Force. Many industry groups expressed interest in the Alaska OCS, and the State has been largely supportive of Federal leasing plans, consistent with State comments. Some local governments and organizations also support OCS leasing, subject to mitigation and certain restrictions. Other local communities, some Native groups, and some special interest groups oppose additional oil and gas activity on the Alaska OCS.

In response to concerns expressed in comments on the Proposed Program and at hearings on the draft EIS, 416 blocks east of Barter Island that are farther from shore and encompass a major portion of the whale migration corridor were excluded from consideration. This would retain for leasing consideration the nearshore area, which includes active OCS leases and is adjacent to State nearshore areas where future oil and gas lease sales and exploration are anticipated. The oil and gas resources in the area recommended for exclusion are considered uneconomic at the present time due to the lack of nearby infrastructure. Thus, this decision should both preserve the option to lease in the more prospective area located closer to anticipated nearshore activity and ameliorate most concerns about potential effects on subsistence values. This option would allow us to continue to study the included area for interaction of industrial activity and subsistence use. Furthermore, at the time of the sale, the area could be deferred. Continuing outreach efforts and work with communities, in combination with a flexible decisionmaking process may help to alleviate any concerns.

## Gulf of Mexico Region

The Proposed Final Program includes annual areawide sales for the Central and Western Gulf of Mexico Planning Areas, as shown in table 1, to provide industry with the flexibility and the reliable schedule so important to long-term planning. The proposed Eastern Gulf of Mexico lease sale would cover blocks in a carefully crafted program area offshore Alabama and in the deep-water areas along the boundary of the Central Gulf of Mexico Planning Area. It recognizes the resource potential along the Central Gulf of Mexico and Eastern Gulf of Mexico Planning Areas boundary line and recognizes the importance of aesthetic values and related tourism to coastal residents and the State of Alabama. It also is consistent with Florida's continued opposition to activity within 100 miles of its coast.

The Central and Western Gulf Planning Areas rank highest in terms of proven hydrocarbon potential, net social value, and the indicated interest of the oil and gas industry. In addition, any environmental risks of OCS production in the Gulf of Mexico are largely offset by resulting decreases in risks from foreign tanker traffic. The adjacent States, aside from Florida, generally have been supportive of continued OCS leasing. With the exception of production from a limited portion of the Southern California Planning Area, all OCS production comes from the Central and Western Gulf of Mexico.

In response to concerns about possible negative visual impacts of nearshore development off Alabama and industry comments expressing interest in the Eastern Gulf, the Secretary decided to exclude everything within 15 miles of shore and expand the number of deep-water blocks available for leasing. The exclusion of 22 whole and partial nearshore blocks recognizes a request from the Governor of Alabama, made in light of the widespread opposition by local residents, local governments, the local tourism industry, and the State legislature to construction of any additional visible oil and gas structures. The decision to expand the program area by adding 384 deep-water blocks, consideration of which was

Insert map 1

Insert map 2

recommended by the Governor of Alabama, would encompass all nearby existing deep-water leases in the Eastern Gulf and allow development on both sides of the Central Gulf of Mexico and Eastern Gulf of Mexico Planning Areas boundary line.

## **Pacific Region**

There are no Pacific OCS lease sales on the proposed schedule. Production from the Federal OCS off Southern California began in 1968. While the most recent OCS lease sale in that area took place over a decade ago, production actually has increased in the last few years as permitting difficulties related to transportation and processing of oil produced from existing leases have been resolved through the cooperative efforts of the operators, State and local interests, and the MMS. Many coastal residents remain strongly opposed to any increase in oil and gas activities. The State has commented favorably on the exclusion of planning areas off California from the proposed schedule. Local government policies have reflected this sentiment as well. Recent cooperation between the MMS Pacific Office and officials from some local counties in California has helped to identify key concerns and to pave the way for a doubling of production from existing leases. Despite the fact that the proposed schedule would extend into the year 2002, thus exceeding the current moratorium, the Secretary did not want a proposed lease sale in the Pacific to jeopardize the long-term cooperative efforts that have developed with local communities in California.

## **Atlantic Region**

The analysis for the Proposed Final Program included an option to hold an Atlantic OCS lease sale in 2000. The option was not selected. Despite several previous lease sales in the Atlantic Region, there have been no commercial discoveries. While some of the legal claims regarding leases in the vicinity of the Manteo Prospect off North Carolina have been settled, industry interest in this area is unlikely to increase until the underlying disputes are completely resolved. The MMS has begun to work with State and local governments and with other interested parties to identify and resolve issues of mutual concern. The State of North Carolina opposes any new lease sales prior to completion of additional studies relating to existing leases, while other States, including Virginia, have expressed varying degrees of support for carefully designed sales after resolution of specific concerns. Due to the long-term nature of this process and conflict over existing leases, the Secretary felt it premature to schedule an Atlantic lease sale in the program for 1997-2002.

## **Further Discussion of Proposed Schedule**

Among the specific factors the Secretary has considered in his decision are today's reality of relatively inexpensive imported oil; continuously imposed or threatened congressional restrictions; strategic consensus-building efforts for exploration and development in the places where actual exploration and development are most likely to occur or expand; the Nation's current reliance on OCS resources; and section 18 criteria, such as other uses of the OCS sea and seabed; the laws, goals, and policies of adjacent States (including their policies toward any oil and gas resources in their own waters); economic, social, and environmental values; and industry interest. The 5-year

period during which the new program will be in effect is an appropriate time to address the controversies that the program has faced. Focusing on being a good neighbor and going slowly, with every

environmental concern extensively studied and analyzed, could result in a 5-year schedule under which most lease sales are held on time and future OCS production is maximized. The approach reflected in the Proposed Final Program not only facilitates problem-solving and consensus building but also maintains a viable infrastructure and promotes production in proven areas while encouraging exploration and infrastructure development in other areas—such as the deep-water Gulf of Mexico and selected areas on the Alaska OCS—where there is industry interest and the potential for major discoveries. Such a program best meets national energy needs at this time.

The Proposed Final Program also considers existing information on regional characteristics and the equitable sharing of developmental benefits and environmental risks. It can be seen as equitable because those regions and onshore areas facing the most risk also receive the greatest benefits. The Central and Western Gulf of Mexico would face the greatest risks and reap the most benefit. The California OCS will continue to produce high volumes of OCS oil and gas from previously issued leases even though there are no California OCS sales on the proposed schedule. The Alaska OCS, on the other hand, has not yet experienced any major economically viable discoveries, and information on geological and geophysical characteristics of that region is less developed. It is prudent, therefore, that this program proposes several sales in the Alaska OCS Region, especially given the existing infrastructure and onshore production in Alaska, which is not present in the less promising Atlantic planning areas. Inasmuch as both the principal risk (oil spills) and benefit (employment) of OCS development do not accrue to a region until actual production, those States adjacent to existing production will continue to bear the bulk of both the developmental benefits and environmental risks of this program with or without new leasing in other OCS planning areas. In addition, there are measures independent of the 5-year program decision that can be taken to reduce risk to the areas included in the schedule: many leases now include stipulations to avoid some anticipated environmental risks and Congress can enact legislation to provide for some form of coastal impact assistance if it believes that States and localities need further compensation for risks imposed by nearby OCS activity.

**E. Other  
Program  
Decisions**

**Assurance of Fair Market Value.** The Secretary has chosen for the Proposed Final Program the same options for assurance of fair market value that he chose for the Proposed Program. The basic minimum bid level would be set at \$25 per acre, subject to sale-by-sale reconsideration, and the current two-phase bid adequacy process, as modified by an announcement of March 29, 1996, would be retained.

**F. Final Steps  
in the  
Process**

Sixty days after the Proposed Final Program is submitted to the President and the Congress, the Secretary may approve the new 5-year program. During that 60 days, there may be further internal analysis, discussion with constituents, and a review of the decisions announced in this document.





## II. FRAMEWORK FOR FORMULATING THE PROPOSED FINAL PROGRAM

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### A. Analytic Approach

The Proposed Final Program analysis presented in this decision document succeeds and supplements the analysis conducted as the basis for the July 1995 Draft Proposed Program and the February 1996 Proposed Program. The Draft Proposed Program identified for further leasing consideration seven *program areas* consisting of all or parts of eight of the OCS planning areas (see maps 1 and 2). The analysis for the Proposed Program focused on those seven program areas as well as an additional program area in the Mid-Atlantic Planning Area and a deep-water expansion of the program area in the Eastern Gulf of Mexico Planning Area. The program proposal selected by the Secretary was the same as the Draft Proposed Program. This Proposed Final Program analyzes the areas examined in the Proposed Program. Although the Mid-Atlantic and expanded Eastern Gulf of Mexico program areas were not selected for the Proposed Program, they continue to be included in the analysis to ensure that the Secretary has a range of reasonable alternatives to consider pursuant to the National Environmental Policy Act (NEPA).

The analysis presented in this decision document continues the basic approach taken for previous 5-year programs that has been upheld by the U.S. Court of Appeals for the D.C. Circuit. It considers the most current information pertaining to the principles and factors of section 18 of the OCS Lands Act, as amended, and applies both quantitative and qualitative information to those criteria as appropriate. Part II.C below is a general outline of the Proposed Final Program analysis of section 18 principles and factors that shows where relevant detailed information is presented in this decision document, the programmatic final EIS, and other related documents.

This decision document incorporates by reference the following available materials for the Secretary's consideration in formulating the Proposed Final Program:

- ! Other documents related to the development of a new 5-year program for 1997-2002: Draft Proposed Program Decision Document (July 1995); Proposed Program Decision Document (February 1996); draft Environmental Impact Statement (EIS); and final EIS;
- ! Documents related to the 5-year program for 1992-1997: Proposed Final Program Decision Documents and Summary and Decision (April 1992); Program Approval Decision Memorandum (June 1992); and final EIS (April 1992);
- ! *An Assessment of the Undiscovered Hydrocarbon Potential of the Nation's Outer Continental Shelf* (OCS Report MMS 96-0034—available on the MMS home page at <http://www.mms.gov>);
- ! Other MMS Reports:

—Federal Offshore Statistics: 1994 (in press)

- OCS National Compendium (MMS 91-0032)
- Atlantic Update (MMS 90-0060)
- Gulf of Mexico Update (MMS 92-0049)
- Alaska Update (MMS 92-0053)
- The Offshore Environmental Studies Program (1973-1989) (MMS 91-0028) and supplementary reports available through the Environmental Studies Program Information System (ESPIS)
- OCS Program Cumulative Effects 1987-1991 (MMS 95-0007)
- OCS Oil Spill Facts (March 1995);

! National Research Council (NRC) Reports:

- Environmental Information for Outer Continental Shelf Oil and Gas Decisions in Alaska
- Assessment of the U.S. Outer Continental Shelf Environmental Studies Program (Volumes 1-IV);

! Report of the OCS Policy Committee's Subcommittee on OCS Legislation (October 1993);

! The Alaska Regional Stakeholders Task Force Report to the OCS Policy Committee (March 1995) and subsequent recommendations dated May 6, 1996;

! Notice of Call for Public Comment on General Leasing Policies in the Central and Western Gulf of Mexico Planning Areas under the Comprehensive Outer Continental Shelf Natural Gas and Oil Resource Management Program for 1992-1997 (58 *FR* 64409, December 7, 1993) and resulting comment summaries;

! Notice of Call for Comment on Policy Options and Announcement of Related Workshop for OCS Natural Gas and Oil Resource Management (60 *FR* 76, April 20, 1995) and resulting comment summaries;

! Notice of Deepwater Royalty Relief for New Leases (61 *FR* 12022, March 25, 1996);

! Notification of Procedural Changes [relating to bid adequacy evaluation] (61 *FR* 14162, March 29, 1996);

! U.S. Department of Energy (DOE) Domestic Natural Gas and Oil Initiative (December 1993) and subsequent annual progress report (February 1995);

! DOE *Annual Energy Outlook* (1992, 1994, 1995, and 1996);

! *Sustainable Energy Strategy*, DOE National Energy Policy Plan (July 1995); and

! U.S. Department of Commerce, *The Effect of Imports of Crude Oil and Refined Petroleum Products on the National Security* (December 1994).

## **B. Procedural Requirements**

The key steps in the program preparation process complying with the requirements of section 18 of the OCS Lands Act and section 102(2)(C) of NEPA are described below.

### **Request for Comments and Suggestions**

On November 16, 1994, the MMS published in the *Federal Register (FR)* (59 FR 59328) a Notice to request comments and suggestions on the preparation of a new 5-year program for 1997-2002 and to begin scoping for the programmatic EIS. At the same time, letters were sent to the Governors of affected States and the heads of interested Federal agencies to announce the start of the program preparation process and request their input.

### **Draft Proposed Program**

On August 9, 1995, the MMS issued for comment the Secretary's initial proposal for the new 5-year program—The Draft Proposed OCS Oil and Gas Leasing Program for 1997-2002—which was formulated based on an updating analysis of information relating to the section 18 criteria and a consideration of the material that had been submitted to the MMS by interested and affected parties in response to the initial request for comments and suggestions. A notice requesting comments on the draft program was published in the *Federal Register* (60 FR 41100) on August 11, 1995. The 60-day comment period for the draft program closed on October 10, 1995.

### **Proposed Program**

On February 7, 1996, the MMS issued the Proposed Program—which affirmed the Secretary's decision for the previous draft proposal—along with a draft EIS. The Proposed Program was submitted to the Congress, the Attorney General, the Governors of affected States, and other interested and affected parties. The Governors received a written explanation of the Secretary's decisions in formulating the Proposed Program, including a description of the disposition of their comments on the Draft Proposed Program. The Proposed Program lease sale schedule was published in the *Federal Register* (61 FR 5256) on February 9, 1996. Issuance of the Proposed Program and draft EIS was followed by a 90-day comment period, during which public meetings to discuss the proposal were held in Alaska, Texas, Louisiana, and Alabama. The comment period closed on May 9, 1996. A summary of comments on the proposal is included as appendix 1 of this document, and comments and information that were offered relating to the NEPA analysis are presented in chapter V of the final EIS.

### **Proposed Final Program**

After comments on the Proposed Program and draft EIS are considered and further analysis is conducted, the Proposed Final Program is issued along with the final EIS. The Proposed Final Program is submitted to the President and the Congress along with copies of comments received and an explanation of the disposition of any recommendations received from affected States and the Attorney General.

## **Program Approval**

Sixty days after the Proposed Final Program is submitted to the President and the Congress, the Secretary may approve the new 5-year program.

### **C. Substantive Requirements**

Section 18 sets forth specific principles and factors to guide 5-year program formulation. Analysis of those principles and factors produces results that are used to develop reasonable options from which the Secretary may, pursuant to section 18(a), select a schedule of proposed lease sales indicating, as precisely as possible, the size, timing, and location of leasing activity which he determines will best meet national energy needs. A brief overview of the section 18 substantive requirements follows.

## **Energy Needs**

Section 18(a) states that the purpose of the 5-year OCS oil and gas leasing program is to help meet the Nation's future energy needs. An analysis of anticipated energy needs is presented in part IV.A of this document. It summarizes the previous analyses of energy needs in the Draft Proposed Program and Proposed Program, which included a discussion of the goals and recommendations of the July 1995 National Energy Policy Plan. The discussion in this decision document also includes a new reference to the most recent *Annual Energy Outlook* published by the Department of Energy (January 1996).

## **Environmental Considerations**

Section 18(a)(1) provides that, in addition to examining oil and gas resources in preparing the 5-year program, the MMS is required to consider the values of other OCS resources and the potential impacts that OCS oil and gas activities could have on those resources including the marine, coastal, and human environments. The principal analysis of issues related to such environmental considerations and concerns is presented in the programmatic final EIS. Part III of this decision document summarizes the findings of the EIS with respect to the size, timing, and location options considered, and part IV.B summarizes the environmental issues raised by commenters and presents pertinent analytic information and references to the EIS.

## **Factors for Determining Timing and Location of Leasing**

Section 18(a)(2) lists eight factors that are to be considered in deciding the timing and location of oil and gas activities among the different areas of the OCS. While some of these factors lend themselves to quantification to facilitate comparison among planning areas, others do not and need to be considered qualitatively. Each of the eight factors

[§18(a)(2)(A-H)] is listed below along with references to the parts of the Proposed Final Program analysis that address them.

***(A) Geographic, Geological, and Ecological Characteristics***

The primary source of information on geographic, geological, and ecological characteristics for consideration in preparing the Proposed Final Program is the programmatic final EIS. Chapter III of the EIS describes the physical, biological, and socioeconomic environments of each OCS region. Chapter IV describes the effects that the size, timing, and location decisions of the Proposed Program (Alternative 1) and the other alternatives considered (Alternatives 2-5) would be expected to have on those resources based on hypothetical scenarios. Summaries of the EIS findings also are provided in part III of this decision document. Additional relevant information in EIS's that have been prepared for lease sales in the current program also has been considered in developing this Proposed Final Program.

In addition to the EIS information, this analysis has the benefit of the following relevant reports and documents incorporated by reference: results of the most recent national resource assessment for the OCS (MMS 96-0034); regional update reports—Alaska (MMS 92-0053), Atlantic (MMS 90-0060), and Gulf of Mexico (MMS 92-0049); cumulative effects reports prepared pursuant to section 20(e) of the OCS Lands Act (MMS 88-0005 and MMS 95-0007); and the results of recent environmental studies as summarized in regional status reports. All this information is used in the ongoing examination and refinement of the program areas that originally were delineated in the Draft Proposed Program.

***(B) Equitable Sharing of Developmental Benefits and Environmental Risks***

An analysis of the equitable sharing factor is presented in part IV.C of this document. It cites findings of previous 5-year program analyses and presents new information concerning the nature and distribution of benefits and risks associated with the size, timing, and location options under consideration. This analysis also includes references to the portions of the programmatic final EIS that address risks and benefits associated with the analyzed program alternatives.

***(C) Location with Respect to Regional and National Energy Markets and Needs***

Part IV.A of this decision document presents an analysis of regional and national energy needs. Chapter III of the programmatic final EIS describes the socioeconomic environment for each OCS region, including the existing oil and gas infrastructure and its relationship to new leasing. Additional sources of information relating to regional distribution and processing of OCS oil and gas include the regional update reports cited above and recent lease sale EIS's.

***(D) Location with Respect to Other Uses of the Sea and Seabed***

Information on competing uses of the OCS is included in the programmatic final EIS descriptions of the physical, biological, and socioeconomic environments for each OCS

region in chapter III as well as in the discussion of environmental consequences in chapter IV. Relevant information from the EIS is summarized in part IV.C of this document. Additional sources of information relating to this factor include recent lease sale EIS's, the cumulative effects reports, and various OCS environmental studies program reports.

***(E) Interest of Potential Oil and Gas Producers***

Part IV.C includes a description of the oil and gas industry's comments as they relate to interest in the leasing proposals under consideration. Relevant industry comments are summarized in the discussions of leasing options presented in part III, and all comments received are summarized in appendix 1.

***(F) Laws, Goals, and Policies of Affected States***

Information on relevant laws, goals, and policies and Federally approved coastal zone management programs of affected coastal States is included in the summaries of selected comments that are presented in the discussions preceding leasing options in part III. In addition all comments received are summarized in appendix 1.

***(G) Relative Environmental Sensitivity and Marine Productivity***

An analysis of the environmental sensitivity/marine productivity factor is presented in part IV.C of this document. It is based on the information and approach of the analysis done for the 5-year program for 1992-1997. The analysis cites appendix 11 of the April 1992 Secretarial Issue Document (SID) and discusses relevant information that has become available since 1990.

***(H) Environmental and Predictive Information***

The principal source of environmental and predictive information is the programmatic final EIS, primarily chapters III and IV. Chapter III of the EIS describes in detail the physical, biological, and socioeconomic environments of each OCS region, and chapter IV of the EIS discusses expected environmental effects based on hypothetical scenarios. Pertinent findings of the EIS are summarized in part III of this decision document. Additional sources of information relating to this factor include recent lease sale EIS's, regional update reports, cumulative effects reports, and various environmental studies program reports.

**Balancing Potential Environmental Damage, Discovery of Oil and Gas, and Adverse Impact on the Coastal Zone**

Section 18(a)(3) requires the Secretary to render decisions on the timing and location of OCS leasing that balance environmental and developmental principles based on consideration of the factors described above. The statute does not specify what kind of balance or how to weigh each of the specified factors and considerations. Each Secretary has discretion to weigh and choose a reasonable balance.

This balancing requirement is addressed in part IV.C of this decision document, which presents a comparative analysis of planning areas. As in previous 5-year program decision documents, the comparative analysis includes an estimation of net social value for each OCS area under consideration that is derived by calculating the value of oil and gas resources minus the costs to industry and the environmental and social costs of developing those resources (additional microeconomic benefits also are estimated in the current analysis). See table 6 for results of the social value analysis.

Information also has been quantified to facilitate comparison of the environmental sensitivity/marine productivity factor (see tables 7-9). Analysis of the equitable sharing factor includes a consideration of quantified regional costs and benefits (see table 10) and a discussion of the nature and distribution of developmental benefits and environmental risks. The comparative analysis also includes an examination of industry interest and other balancing considerations based on information pertaining to the nonquantifiable factors set forth in section 18(a)(2), the findings and purposes of the OCS Lands Act Amendments of 1978 (Title II), the comments and recommendations of interested and affected parties, and other relevant information.

### **Assurance of Fair Market Value**

Section 18(a)(4) requires that leases sold under the 5-year OCS oil and gas leasing program receive fair market value. An analysis pertaining to the assurance of fair market value, which addresses the establishment of a minimum bid level and procedures for reviewing the adequacy of bids received, is presented in part IV.D.

## **D. Judicial Guidance**

The new 5-year program will be the fifth prepared by the Department of the Interior (DOI). The first three programs prepared and approved under section 18 were challenged in court—in 1980, 1982, and 1987. The U.S. Court of Appeals for the District of Columbia Circuit decided all of those lawsuits. The new 5-year program is being prepared in accordance with guidance provided in those decisions, which are cited as follows:

*California I* [California v. Watt, 688 F2d 1290 (D.C. Cir. 1981)];

*California II* [California v. Watt, 712 F2d 584 (D.C. Cir. 1983)]; and

*NRDC* [Natural Resources Defense Council, et al. v. Hodel, 865 F2d 288 (D.C. Cir. 1988)].

No lawsuit was filed against the 5-year program approved for 1992-1997.



### III. PROPOSED FINAL PROGRAM OPTIONS

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#### A. Size, Timing, and Location

Relevant considerations for formulating and selecting options to determine the size, timing, and location of OCS leasing as required by section 18 are discussed below. Options pertaining to size, timing, and location are also discussed. The full range of options available for the Secretary's consideration in deciding on a Proposed Final Program for 1997-2002 is presented. **The options chosen by the Secretary are discussed in part I, Summary of Decision.**

Consideration of the comments of interested and affected parties plays an important part of the section 18 process, and responsiveness to those comments is a key element of MMS policy in framing options and working toward consensus decisions on the OCS program. The Proposed Final Program options presented in this document reflect careful consideration of the section 18 analysis and consultation with interested and affected parties.

#### Considerations

Continuing the approach taken with previous drafts of this program, the Proposed Final Program provides options for scheduling lease sales in the Central and Western Gulf of Mexico Planning Areas and in defined program areas within certain other OCS planning areas. Each lease sale that is scheduled in the approved 5-year program for 1997-2002 will undergo a prelease evaluation and decision process in which interested and affected parties may participate. The prelease process evaluates the proposed lease sale and alternatives (limited to the area identified as available for leasing in the approved 5-year program) and leads to a final decision on the size, timing, and location of each OCS lease sale.

Various considerations are used to determine the timing of OCS lease sales. Section 18 requires the 5-year program to best meet national energy needs and to ensure the receipt of fair market value for lands leased and rights conveyed. The results of analyses and consultation conducted according to section 18 are weighed carefully in formulating a program to accomplish those goals. Other relevant considerations include the possibility of drainage of unleased OCS lands by adjacent production and the effect that scheduling a lease sale in a certain area might have on geological and geophysical data acquisition. In addition the scheduling of lease sales must allow time for orderly and deliberate preparation for each sale, including the acquisition and analysis of relevant scientific information and the completion of the prelease evaluation and decision process.

Principles that were developed for consideration in the formulation and selection of leasing options for the new 5-year program for 1997-2002 are:

#### ! **Best Meeting National Energy Needs Considering the Purposes, Findings, and National Policy of the OCS Lands Act Amendments**

The referenced purposes, findings, and policies provide for expedited and orderly exploration and development of oil and gas resources in a manner that safeguards the environment, minimizes or reduces conflicts with other resources, and assures

that affected State and local governments are informed and consulted in OCS planning and decisionmaking and that their concerns for preserving and protecting their environments are recognized and considered. Consideration of options for the size, timing, and location of OCS leasing in light of these principles should recognize that in some OCS areas the goal of expedited exploration and development is more compatible with affected State and local interests than in others. Earlier, more frequent, and larger lease sale proposals might be more appropriate to consider in areas where the neighboring governments are amenable. In areas where the OCS program has not been received as compatible with State and local interests, it might be more appropriate to consider later and smaller lease sales. In those areas where there has been longstanding and intense opposition and resulting controversy with respect to the orderly development of the OCS program, it might be most appropriate to consider an even slower and more deliberate approach focusing on the resolution of existing conflicts related to the program before scheduling new leasing. Leasing proposals that are perceived locally as too ambitious for historically controversial areas actually could undermine the goal of expedited and orderly exploration and development by engendering more intense controversy and bringing about prohibitions that could be effected over a longer term than the 5-year program for 1997-2002.

In developing a 5-year program to best meet the Nation's energy needs the Secretary should consider today's reality of relatively inexpensive imported oil, continuously imposed or threatened congressional restrictions, strategic consensus-building efforts for exploration and development in the most likely places where actual exploration and development can occur or expand, and the Nation's current reliance on OCS resources.

#### **! Economic, Social, and Environmental Values**

These values and the potential impacts that OCS oil and gas activities could have on them are considered. The economic, social, and environmental values placed on OCS oil and gas and on other resources in marine and coastal areas are reflected in the comments submitted by interested and affected parties. For areas in which resources other than OCS oil and gas currently have higher economic, social, and environmental values it might be appropriate to consider excluding them from this 5-year program or proposing a small sale late in the program in those cases where it appears the values placed on different resources might adapt to such a proposal. For areas in which development of OCS oil and gas is deemed compatible with the values placed on other resources it might be appropriate to consider larger and more frequent lease sales.

#### **! Resource Potential and the Interest of Potential Oil and Gas Producers**

The leasing options for each OCS area reflect a consideration of the potential for the discovery and development of hydrocarbons in conjunction with the apparent willingness of firms to pay fair market value to acquire the lease rights for those anticipated resources. In considering this principle it is relatively straightforward to conclude that areas of greater estimated resource potential and economic value along with higher industry interest would be better candidates for earlier, more

frequent, and larger lease sales and that areas of little or no estimated value or interest would be better candidates for exclusion from the leasing program or for later or less frequent sales. It is more problematic to consider an area with little estimated hydrocarbon potential and definite industry interest or an area with higher potential but lower or diminishing interest. If the potential environmental risk is determined to be acceptable, it might be reasonable to propose leasing in an area such as the former because the interested firm(s)—regardless of the assumptions of the government and other companies concerning the area—are likely to offer fair market value to acquire leases. There are a number of areas of greater estimated resource potential but little or no interest, a state of affairs that has come about due to long-term controversy and resulting restrictions. It might be appropriate to exclude or defer such an area from leasing until underlying conflicts can be addressed and resolved, because firms have expressed reservations about attempting to lease, explore, and develop in a prevailing atmosphere that they perceive as hostile to such actions.

## **! Developmental Benefits and Environmental Risks**

The different areas of the OCS are considered in terms of the developmental benefits and environmental risks that are anticipated to accrue to each area and to be distributed among all of the areas. A proposal to lease an area should examine the overall equitable sharing of benefits and risks among OCS areas. A consideration of available information should indicate that proposed leasing will not cause unacceptable environmental risk or pose an unacceptable level of conflict with other uses of the sea and seabed or the recovery of other resources such as fish and shellfish. Size, timing, and location options and decisions should be considered in light of their potential environmental impacts on the planning area as well as their overall effect on the expeditious and orderly development of the potential hydrocarbon resources estimated to be in the proposed leasing program. Also, for some areas it might be determined that additional research relating to benefits and risks would significantly improve the information available for decisionmaking. For such areas it might be appropriate to consider deferring leasing proposals until additional studies are completed.

## **! Competing Uses of the OCS**

The other uses of the resources and space within the areas analyzed for possible leasing are considered. Significant competing uses include subsistence (traditional hunting and fishing activities by Alaska Natives), commercial fishing, tourism and recreation, vessel traffic, protection and preservation of marine and coastal resources in areas such as parks and sanctuaries, military and space program operations, and nonenergy marine mineral development. It might be appropriate to consider larger and more frequent lease sales in areas where such competing uses are nonexistent, minimal, or demonstrated to be generally compatible with OCS oil and gas activities. In other areas where significant established competing uses do not appear to be compatible with new OCS leasing and related activities, it might be appropriate to consider exclusion of all or parts of such areas and a slower pace of leasing to accommodate those other uses.

## **! Laws, Goals, and Policies of Affected States**

The compatibility of OCS program options with the relevant State laws, goals, and policies identified by the Governors of affected States has been fully considered in formulating this Proposed Final Program. It is reasonable to conclude that proposed OCS leasing might be more appropriate in areas where the affected State(s) have measures that the Governors and State agencies cite explicitly supporting the OCS program, indicate that OCS activities generally are consistent with Federally approved State coastal zone management (CZM) programs, or refer to provisions for administering oil and gas programs in State waters. In many cases the existence of common hydrocarbon plays and related infrastructure in State and Federal waters promotes offshore development activity in both realms if the State policies are supportive. Conversely, in areas where the affected State(s) have policies preferring alternative energy sources to offshore oil and gas, indicate that OCS activities have not been found to be consistent with CZM programs, or identify measures that have been established to prohibit offshore oil and gas activity in State waters, such policies have the effect of discouraging or impeding expeditious and orderly OCS activities, and therefore, it might not be appropriate or wise in the long run to propose OCS leasing in this 5-year program.

## **! Regional Energy Needs**

The energy needs of the onshore region in which anticipated OCS hydrocarbon resources would be processed and used are considered. In those cases where a particular region has demonstrated a need and economic and environmental preferences for using OCS oil and gas it would be reasonable to consider earlier, more frequent, and larger lease sales. However, another region might have a large potential demand for oil or gas that could be produced from the nearby OCS, but State and local policies favor using alternative forms of energy or receiving oil and gas from other geographic sources. In developing and considering size, timing, and location options in such a case, the environmental benefits and risks associated with using other fuels or importing oil or gas over great distances should be considered and compared with the risks and benefits of developing and using oil and gas from the OCS.

Additional background information on size, timing, and location considerations is contained in the April 1992 SID on pages 123-143.

## ***Options for Scheduling Lease Sales***

Options for scheduling lease sales in the Proposed Final Program are presented by OCS region and planning area. For each region a review of the Proposed Program decision precedes the presentation of options. The discussion of Proposed Final Program options for each planning area includes a summary of key comments received by the MMS in response to the Proposed Program. These comment summaries are adapted from appendix 1, which provides information on all comments received by the MMS and relevant statements offered at public meetings held during the comment period following issuance of the Proposed Program. Additional information that is relevant to the

consideration of each planning area for leasing is presented in part IV.C of this document and in chapters III and IV of the programmatic final EIS. The overview of section 18 requirements in part II.C above describes the principles and factors that have been analyzed and provides specific references to the places in this document and in the EIS where corresponding information is presented.

Following the presentation of the set of leasing options for each planning area, each option is discussed individually in terms of the value of the benefits that would be anticipated as a result of the proposed leasing and ensuing production, as well as in terms of the potential environmental impacts that could be expected. The analysis underlying the valuation of leasing options—and definitions of associated terms—is provided in appendix 2. The detailed information on which the summaries of environmental impacts are based is provided in the final EIS.

### ***Relationship of Program Options to EIS Alternatives***

The draft EIS prepared for the Proposed Program analyzed five separate alternatives including the proposed action. The final EIS accompanying this Proposed Final Program analyzes the five alternatives with additional elements examined under Alternative 4 as indicated in italics below.

- ! Alternative 1—The Proposed Action—corresponds to Option 1 in this decision document for the Alaska and Gulf of Mexico areas. The term "program proposal" used in this document is synonymous with this alternative.
- ! Alternative 2—No Action—would schedule no sales (Option 2 in this decision document).
- ! Alternative 3—Slow the Pace of Leasing—would modify the proposed action by reducing the number of sales scheduled in the Beaufort Sea and the Central and Western Gulf of Mexico areas (Option 3 in this decision document).
- ! Alternative 4—Exclude Some Areas—would modify the proposed action by excluding the Hope Basin and Gulf of Alaska program areas, the Eastern Gulf of Mexico program area *or a portion of that area, and a portion of the Beaufort Sea program area* from leasing consideration (Option 3 for Chukchi Sea/Hope Basin, Option 2 for Gulf of Alaska, Options 2 *and* 4 for Eastern Gulf of Mexico, *and Option 4 for Beaufort Sea* in this decision document).
- ! Alternative 5—Lease Additional Areas—would modify the proposed action by expanding the Eastern Gulf of Mexico program area with the addition of 384 deep-water blocks and considering two sales in the revised area and by considering scheduling a sale in the Mid-Atlantic (Option 3 for the Eastern Gulf and Option 1 for the Mid-Atlantic in this decision document).

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## ALASKA REGION

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### Proposed Program Decision

The Proposed Program scheduled for further consideration the following lease sales in the Alaska OCS Region:

- ! Beaufort Sea—sale in 1998 in the program area depicted on map 3 and sale in 2000 in the program area depicted on map 4;
- ! Chukchi Sea/Hope Basin—one sale in 2002 in the program area depicted on map 7;
- ! Cook Inlet/Shelikof Strait—one sale in 1999 in the program area depicted on map 8; and
- ! Gulf of Alaska—one sale in 2001 in the program area depicted on map 9.

The proposed timing and location of these lease sales are based in large part on the recommendations of the Alaska Regional Stakeholders Task Force, which identified these planning areas for further analysis in developing the new 5-year program and requested that no more than one Alaska OCS lease sale be scheduled for each area per year.

The Alaska Regional Stakeholders Task Force was established by the OCS Policy Committee of the Minerals Management Advisory Board in November 1994 and charged to assist the MMS in developing the Alaska Region element of the new 5-year program for 1997-2002. The Task Force includes members representing: Alaska Native subsistence, and environmental organizations and communities; commercial fishing and oil and gas industries; and local, State, and Federal Government and Coastal Districts and Coastal Resource Service Areas. The Task Force prepared and submitted to the OCS Policy Committee a report and resolution presenting its findings and recommendations. On May 3, 1995, the OCS Policy Committee voted unanimously to accept the Alaska Regional Stakeholders Task Force report and forward it to the Secretary of the Interior. The Secretary responded to the Chairman of the Policy Committee in a letter dated August 24, 1995, stating, "The specific recommendations of the Task Force report will guide us in developing the 1997-2002 5-year program in Alaska, especially since stakeholders were involved in developing these recommendations."

The Task Force developed a list of evaluation criteria that were used to select the Alaska OCS planning areas recommended to be further evaluated by the MMS. Those criteria and their consistency with the requirements of section 18 are:

- ! Prospectivity (industry interest/hydrocarbon resource potential), which corresponds to sections 18(a)(2)(A) and (E);

- ! Infrastructure, which corresponds to sections 18(a)(2)(A)-(F);
- ! Technology, which corresponds to sections 18(a)(2)(A)-(H);
- ! Local/Tribal Government and Community Interests, which correspond to sections 18(a)(2)(C), (D), (H) and to the consultation provisions of section 18(c)(1);
- ! Subsistence/Socioeconomic/Cultural Interests, which correspond to sections 18(a)(2)(A)-(D), and (H);
- ! Environmental Concerns/Values, which correspond to sections 18(a)(2)(A)-(H).

A member of Greenpeace, representing the Alaska Lands Act Coordinating Committee, submitted as a supplement to the Task Force report a minority report stating that the majority report does not accurately reflect the high level of concern and strong opposition to OCS activity expressed by coastal residents throughout Alaska.

After the Draft Proposed Program was issued, Task Force members were polled to confirm whether they viewed that proposal as being consistent with the original recommendations of the Task Force. Those who responded—with the exception of the member of Greenpeace who submitted the minority report cited above—agreed that the draft program was consistent with those recommendations. The dissenting member reiterated the concerns mentioned in that minority report, stating that neither the original Task Force report nor the draft program reflected the level and nature of concerns expressed by Alaska coastal communities. The co-chair of the Task Force who conducted the poll reported the results in a letter to the Chairman of the OCS Policy Committee dated October 13, 1995. While that letter described the one dissenting opinion and noted that not all members responded, it went on to state that it would be appropriate to conclude that the Draft Proposed Program was consistent with the recommendations of the Alaska Regional Stakeholders Task Force.

The Draft Proposed Program decision was carried forward in the Proposed Program, and the Task Force met again on May 6, 1996—during the 90-day comment period—to discuss issues and concerns and develop additional recommendations. The Task Force endorsed its original recommendations and made the following additional recommendations:

- ! Endorse MMS efforts to incorporate traditional knowledge and expand analyses of effects to marine mammals, as recommended by the North Slope Borough, Alaska Eskimo Whaling Commission, and others;
- ! The MMS should continue to review existing prevention and response technology for oil spills and discharges and to develop incentives to encourage improvements where necessary; and
- ! Review existing mechanisms to compensate communities (subsistence and other resource users) in the event of an oil spill and make recommendations for changes in law (i.e., the Oil Pollution Act of 1990) or regulations as necessary to expedite compensation.

A presentation that included these recommendations and a summary of the minutes of the meeting was given to the OCS Policy Committee at its session on May 22, 1996.

Key comments received by the MMS since starting the 5-year program preparation process—which have included statements and resolutions for and against future leasing—have been summarized in the decision documents for the Draft Proposed Program, the Proposed Program, and the Proposed Final Program. Appendix 1 of this decision document summarizes the most recent comments—those received following issuance of the Proposed Program—and includes a summary of the Alaska Stakeholders Task Force Meeting held on May 6, 1996.

The Alaska Regional Stakeholders Task Force report (including the minority report submitted by Greenpeace) and information related to the Policy Committee's actions are incorporated in this decision document by reference and are available from the MMS. Lease sale options for the Proposed Final Program are based mostly on a consideration of the findings and recommendations of the Task Force and are consistent with the requirements of section 18.

The State of Alaska's comments on the Proposed Program expressed continuing support for the MMS 5-year program preparation process—including the concept of the Alaska Regional Stakeholders Task Force—and made some specific suggestions for identifying issues and focusing discussions by the Task Force in the future. The State also expressed support for using a task force approach for future 5-year program planning and indicated it would be pleased to participate in stakeholders task forces for individual lease sales.

Alaska's comments relating specifically to size, timing, and location options are summarized below and in appendix 1, and State laws, goals, and policies that are relevant to program preparation were summarized in the Draft Proposed Program and considered in the development of program options. All leasing options for the Alaska OCS Region in the Proposed Final Program continue to reflect the consideration of relevant State laws, goals, and policies as identified in the Draft Proposed Program.

## **Proposed Final Program Options**

Information and options are presented for the Alaska OCS program areas that were scheduled for lease sales in the Proposed Program—Beaufort Sea, Chukchi Sea/Hope Basin, Cook Inlet/Shelikof Strait, and Gulf of Alaska. Options are not presented for those areas that have been excluded from leasing consideration in previous drafts of the 5-year program for 1997-2002—St. George Basin, Norton Basin, Navarin Basin, St. Matthew-Hall, North Aleutian Basin, Aleutian Basin, Bowers Basin, Aleutian Arc, Shumagin, and Kodiak.

### **Beaufort Sea**

#### **Selected Comments**

The Alaska Office of Management and Budget, Division of Governmental Coordination, stated that small sale areas such as the one for proposed Sale 170, target areas of oil and gas interest without unnecessarily raising concerns about other areas that are not



likely to receive bids and also mentioned looking forward to working closely with the MMS and other stakeholders during review of individual lease sale proposals. The Mayor of Kaktovik expressed opposition to proposed leasing in the Beaufort Sea, citing concerns about potential negative impacts on the resources, livelihood, and culture of the community. The Mayor of the North Slope Borough reiterated opposition to offshore oil and gas activity and made two recommendations: (1) incorporate in the final EIS for the 5-year program the mitigating measures developed for Beaufort Sea Sale 144; and (2) exclude the bowhead whale feeding area east of Barter Island from future lease sales including proposed Sale 176 in 2000. Concerning the recommendation to exclude the area east of Barter Island, the Mayor stated that fall drilling activities in that area would be inconsistent with provisions of the Borough's Coastal Management Program explicitly prohibiting development that prevents subsistence user access to a subsistence resource.

The Alaska Eskimo Whaling Commission (AEWC) recommended incorporation of the Sale 144 mitigating measures and suggested a number of additional steps designed to protect marine resources and subsistence activities consistent with the Marine Mammal Protection Act and to minimize conflicts with subsistence users. The Alaska Marine Conservation Council (AMCC) reiterated that concerns raised by subsistence hunters in the Beaufort Sea should be fully considered. The Coastal/Oceans Forum of the Sierra Club cited potential offshore and onshore environmental effects and expressed opposition to new leasing in this area.

The American Petroleum Institute (API) and the Alaska Oil and Gas Association (AOGA) endorsed the Alaska lease sales scheduled in the Proposed Program. ARCO Alaska endorsed the Alaska sales but recommended rescheduling the proposed Beaufort Sea sales for 1999 and 2001 if Sale 144 (scheduled for September 1996 under the 5-year program for 1992-1997) is not held before the current program ends in July 1997. BP Exploration (Alaska) Inc. expressed support for the Beaufort Sea sales scheduled in the Proposed Program and reiterated a request to consider accelerating the Alaska sale schedule whenever possible. Chevron, Phillips, and Texaco cited previous comments specifically endorsing the proposed Beaufort Sea lease sales, and Marathon cited previous comments expressing general interest in the area. Shell cited previous comments expressing support for scheduling only one small nearshore sale in 2000.

The U.S. Department of Energy (DOE) commented that Alaska OCS resources potentially can make a great contribution to U.S. energy supplies in the long run.

Additional information concerning comments—including statements offered at public meetings held by the MMS during the comment period following issuance of the Proposed Program—is provided in appendix 1.

## **Options**

- (1) Proposal as adopted for Proposed Program—one sale in 1998 focusing on nearshore blocks (map 3) and another sale in 2000 (map 4)

- (2) No sale
- (3) One sale in 2000 in program area (map 4)
- (4) Exclude a portion of the program area to be considered for lease sale in 2000 under Option 1 or Option 3:
  - (a) all 500 blocks east of Barter Island (map 5); or
  - (b) the 416 blocks east of Barter Island that are farther from shore and encompass the central whale migration corridor (map 6)
- (5) Other

**Insert map 3**

**Insert Map 4**

**Insert map 5**

**Insert map 6**

**Valuation of Option 1.** The net social value resulting from anticipated hydrocarbon production under this option is estimated to be \$818 million in the Base Case and \$7.6 billion in the High Case. Additional microeconomic benefits are estimated to be \$270 million in the Base Case and \$1.8 billion in the High Case.

**Environmental Impacts Associated with Option 1.** This option is examined in the programmatic final EIS as part of Alternative 1.

Pollutant concentrations are not likely to exceed water-quality criteria outside a 100-meter radius around each drill site. There could be increases of nitrogen oxide concentration in the ambient air.

Sublethal effects could occur on the bowhead whale population due to noise and oil spills. Noise could affect fin, humpback, right, blue, sei, and sperm whale populations. The primary effects on beluga whales would be from noise from marine-vessel traffic and oil spills. Oil spills could result in some mortality among newborn or severely stressed adult ice seals. Adult walruses should experience few fatalities, but calves could experience fatal effects. The effects on caribou are expected to include local displacement along transportation corridors but should not affect migrations, overall distribution, and abundance.

Abandonment of threatened arctic and endangered American peregrine falcon nests could occur, and activities are expected to disturb few nesting eagles. Mortality from oil spills is expected to be minimal. Stellers, spectacled eider, and short-tailed albatross are expected to experience minimal effects related to entanglement in debris and ingestion of plastics. Mortality of these species due to an oil spill might require two generations or more for population recovery. Oil spills could result in losses to diving duck populations occupying open-water habitats farther offshore in spring. Oil spills contacting most goose species should cause minor losses. The major impact-producing factor on seabirds is expected to be spilled oil.

The level of oil and gas exploration and development is not likely to have an appreciable effect on groundfish or shellfish populations.

Causeway and pipeline landfall construction and oil spills might affect wetland-estuarine habitats. Oil spill contamination of wetland-estuarine habitats would affect the biological diversity or productivity of invertebrate communities.

Impacts on sociocultural systems would be centered predominantly within the arctic communities of the North Slope Borough and Northwest Arctic Borough, primarily because of potential impacts to subsistence harvests from oil spills.

Potential impacts on recreation and tourism in the Beaufort Sea could result from the accidental deposition of trash and debris that could reach the shoreline.

Tanker spills of OCS oil produced off Alaska as a result of leasing under the proposed action could occur in the waters of the Pacific Region, elevating hydrocarbon levels and limiting water use within affected areas over a period of several days to weeks. Such a spill could result in the deaths of a few individuals of Guadalupe fur seals, sea lion pups,

or sea otters. Populations of black storm-petrel, Xantus' murrelet, marbled murrelet, whiskered auklet, and clapper rails could require at least three generations for recovery.

The impacts to Pacific whiting, salmon, and steelhead trout within Washington, Oregon, and California would not be discernible from natural variations both locally and regionally. Recovery of affected local populations should occur within 2 years.

Oil contact with rocky intertidal areas could cause mortality and alteration of ecological relationships within the biotic community. If a spill contacted one or more of the relatively few hard-bottom communities, it could result in mortality of the biota causing alterations of ecological relationships lasting for at least 2 years. Impacts from oil spills entering wetlands and estuaries could involve destruction of a major part of the local biotic community where oil has soaked into the sediments. Recovery could require 5 or more years.

A large oil spill could affect vessel traffic and ports and public services. Some vessel traffic would be rerouted during the spill and cleanup, fishing activity would be curtailed in the spill area, and some ports could experience increased activity while others could be closed. This could result in economic losses for up to two seasons for fixed-gear fishermen and financial losses to businesses in California, Washington, and Oregon. Disturbance to recreational fishing could result in local economic losses of up to 20 percent for approximately a month.

**Valuation of Option 2.** The total net value of benefits resulting from anticipated hydrocarbon production under this option would be zero since no activity would take place.

**Environmental Impacts Associated with Option 2.** This option is examined in the programmatic final EIS as part of Alternative 2.

The choice of this option would result in a lack of activities associated with other options proposing sale(s) in the planning area. Environmental impacts from presale seismic activity, exploration drilling, and placement of platforms and pipelines would not occur. Activity and environmental impacts from development on leases purchased during past lease sales would continue. Potential effects on the Pacific OCS Region as a result of spills of tankered Alaska OCS oil under the proposed action would be eliminated.

**Valuation of Option 3.** The net social value resulting from anticipated hydrocarbon production under this option is estimated to be \$478 million in the Base Case and \$4.3 billion in the High Case. Additional microeconomic benefits are estimated to be \$162 million in the Base Case and \$1.1 billion in the High Case.

**Environmental Impacts Associated with Option 3.** This option is examined in the programmatic final EIS as part of Alternative 3.

Holding only one sale in the Beaufort Sea as proposed in this option should result in a lower level of impacts to the North Slope Borough and other south-central Alaska communities and a lower level of potential impacts on subsistence harvests and social

networks due to a smaller amount of oil being shipped out of the Port of Valdez by tanker.

Fewer oil spills and OCS activity in the Beaufort Sea should result in a lower level of impact to diving ducks and other marine birds and mammals, but the relatively small difference in expected activity between this option and the option of holding two sales should lead to similar kinds and levels of impact for water quality, fish resources, coastal and seafloor habitats, archeological resources, and recreation and tourism.

Fewer lease sales in the Alaska OCS Region could be expected to reduce slightly the amount of oil produced and transported, which would result in a diminished but not measurable reduction in tanker traffic and a slightly reduced risk of tanker accidents affecting the Pacific Coast. The potential impacts of tanker spills in the Pacific OCS Region are summarized in the discussion of Option 1.

**Valuation of Option 4.** The net social value resulting from anticipated hydrocarbon production under Option 1 or Option 3 would not change if this option is chosen (see explanation in appendix 2).

**Environmental Impacts Associated with Option 4.** This option is examined in the programmatic final EIS as part of Alternative 4.

The adoption of either the 500-block or 416-block exclusion considered under this option would not alter the overall impacts on the planning area that are discussed under Option 1 or 3 because the anticipated production and levels of activity assumed for those options would be the same. However, no oil and gas activity could occur in the area excluded and thus, any direct impacts to resources in the area excluded would be eliminated. Activity in the area remaining for leasing could result in oil spills that still might have some effect on the resources in the area excluded.

## **Chukchi Sea/Hope Basin**

### **Selected Comments**

Alaska's Division of Governmental Coordination reiterated appreciation that the area along the Chukchi Polynya has been excluded as previously recommended by the State. The President of the Native Village of Point Hope cited concerns about environmental effects and expressed opposition to the Proposed Program on behalf of the animals, people, and nature of the region. The Mayor of the North Slope Borough reiterated general opposition to offshore oil and gas activity. The Bering Straits Coastal Resource Service Area cited concerns about environmental effects and recommended that onshore oil and gas and coal development precede any offering of offshore oil and gas leases. The Kotzebue IRA cited concerns about the ability to adequately respond to offshore oil spills in the arctic and expressed continued opposition to proposed leasing in the Chukchi Sea/Hope Basin area.

The Alaska Eskimo Whaling Commission (AEWC) recommended incorporation of the Beaufort Sea Sale 144 mitigating measures and suggested a number of additional steps designed to protect marine resources and subsistence activities consistent with the Marine Mammal Protection Act and to minimize conflicts with subsistence users.



Maniilaq Association (Kotzebue) cited numerous environmental concerns and strongly recommended no leasing in the Chukchi Sea/Hope Basin area. The AMCC cited previous comments recommending no leasing in this area and stated that no new knowledge to support scheduling a sale in the next 5-year program has emerged since the most recently proposed sale was canceled in 1995. The Coastal/Oceans forum of the Sierra Club expressed opposition to leasing in this area.

The API and the AOGA endorsed the Alaska lease sales scheduled in the Proposed Program. ARCO Alaska commented that it is interested in evaluating all of the proposed leasing areas but currently has extremely low interest in Chukchi Sea/Hope Basin. BP Exploration (Alaska) Inc. endorsed the Chukchi Sea/Beaufort Sea boundary adopted in the Draft Proposed Program. Phillips and Texaco cited previous comments specifically endorsing the proposed sale in this area, and Marathon referred to previous comments that expressed general interest in the area.

The DOE commented that Alaska OCS resources potentially can make a great contribution to U.S. energy supplies in the long run.

Additional information concerning comments—including statements offered at public meetings held by the MMS during the comment period following issuance of the Proposed Program—is provided in appendix 1.

## Options

- (1) Proposal as adopted for Proposed Program—sale in 2002 in program area (map 7)
- (2) No sale
- (3) Sale in 2002 excluding Hope Basin portion of program area
- (4) Other

**Valuation of Option 1.** The net social value resulting from anticipated hydrocarbon production under this option is estimated to be \$89 million in the Base Case and \$8.1 billion in the High Case. Additional microeconomic benefits are estimated to be \$161 million in the Base Case and \$2.2 billion in the High Case.

**Environmental Impacts Associated with Option 1.** This option is examined in the programmatic final EIS as part of Alternative 1.

A combined Chukchi Sea and Hope Basin lease sale would result in most of the resulting activity taking place in the Chukchi Sea, and the percentage of the activity that could take place in the Hope Basin cannot be determined.

Some pollutants in the immediate vicinity of offshore activities could have elevated levels above ambient conditions for a short time.

Sublethal effects would occur on fin, humpback, right, blue, sei, sperm, gray, and bowhead whales due to noise. Primary effects on beluga whales would be due to noise (especially from icebreaking and other marine-vessel traffic) and from oil spills. Helicopter flights and vessel traffic should not disturb seal populations. Oil spills could result in some mortality among newborn or severely stressed adult ice seals. Adult walrus should experience few fatalities from oil spills.

Air traffic might cause limited disturbance to shorebird populations. Abandonment of threatened arctic and endangered American peregrine falcon nests could occur, and activities are expected to disturb few nesting eagles. Impacts to diving ducks from oil spills could result in losses to populations occupying open-water habitats farther offshore

Insert map 7

in spring. Oil spills contacting most goose species would be expected to cause minor losses. Disturbance and mortality of seabirds from spilled oil could require several breeding generations for recovery.

Impacts on sociocultural systems would be centered predominantly within the Northwest Arctic Borough, primarily because of oil spill impacts to harvests from oil spills. Disruption of Inupiat subsistence harvests, especially of the bowhead, could affect task groups and sharing networks among kinship groups and communities.

Potential effects on the Pacific Region as a result of spills of tankered Alaska OCS oil are discussed under Beaufort Sea Option 1 above.

**Valuation of Option 2.** The total net value of benefits resulting from anticipated hydrocarbon production under this option would be zero since there would be no activity.

**Environmental Impacts Associated with Option 2.** This option is examined in the programmatic final EIS as part of Alternative 2.

The choice of this option would result in a lack of activities associated with other options proposing a sale in the planning area. Environmental impacts from presale seismic activity, exploration drilling, and placement of platforms and pipelines would not occur.

There are no existing OCS leases or intervening lease sales scheduled that could result in activity in the absence of the proposed sale. Potential effects on the Pacific Region as a result of spills of tankered Alaska OCS oil under the proposed action would be eliminated.

**Valuation of Option 3.** The net social value and additional microeconomic benefits resulting from anticipated hydrocarbon production under this option would be identical to those of Option 1 (see explanation in appendix 2).

**Environmental Impacts Associated with Option 3.** This option is examined in the programmatic final EIS as part of Alternative 4.

If a sale is held only in the Chukchi Sea portion of the program area, excluding the Hope Basin portion, all activity would take place in the Chukchi Sea area, and the levels of activity would be the same as postulated for a Chukchi Sea/Hope Basin sale.

Because the levels of activity expected in the Chukchi Sea from this option would be largely indistinguishable from those expected as a result of holding a combined sale, the environmental impacts would be essentially the same in level and types as described in Option 1.

## **Cook Inlet/ Shelikof Strait**

### **Selected Comments**

Comments on the Proposed Program that were submitted by Alaska's Division of Governmental Coordination did not refer directly to this area but did mention looking forward to working closely with the MMS and other stakeholders during review of

individual lease sale proposals. In a letter dated April 1, 1996, concerning Cook Inlet Sale 149 in the 5-year program for 1992-1997, the Governor cited resource values, potential environmental impacts, and the opposition of local populations in stating that he did not believe that sale is right for the area. He further stated that his position on Sale 149 would not set a precedent for any other offshore lease sales in Alaska. Kodiak Island Borough cited its participation in the Alaska Regional Stakeholders Task Force and stated no objections to the proposed sale in 1999.

The AMCC cited previous comments recommending no leasing in this area. The Coastal/Oceans Forum of the Sierra Club expressed opposition to leasing in this area.

The API and the AOGA endorsed the Alaska lease sales scheduled in the Proposed Program, and the AOGA recommended modifying the proposed schedule if Sale 149 is not held before the current 5-year program ends in July 1997. ARCO Alaska expressed a general interest in all Alaska areas that are proposed for leasing and suggested revising the Alaska schedule if Sale 149 is delayed past July 1997. Chevron and Phillips cited previous comments specifically endorsing the proposed Cook Inlet/Shelikof Strait sale, and Marathon cited previous comments expressing general interest in the area.

The DOE commented that Alaska OCS resources potentially can make a great contribution to U.S. energy supplies in the long run.

Additional information concerning comments—including statements offered at public meetings held by the MMS during the comment period following issuance of the Proposed Program—is provided in appendix 1.

## Options

- (1) Proposal as adopted for Proposed Program—sale in 1999 in program area (map 8)
- (2) No sale
- (3) Other

**Valuation of Option 1.** The net social value resulting from anticipated hydrocarbon production under this option is estimated to be \$30 million in the Base Case and \$1.4 billion in the High Case. Additional microeconomic benefits are estimated to be \$17 million in the Base Case and \$231 million in the High Case.

**Environmental Impacts Associated with Option 1.** This option is examined in the programmatic final EIS as part of Alternative 1.

Drilling discharges could cause a change in water quality in marine and coastal waters, although pollutant concentrations are not likely to exceed water-quality criteria outside a 100-meter radius. Discharges would reduce water quality on considerably less than 1 percent of the area. A recent MMS-sponsored study of Cook Inlet water quality found that Cook Inlet has very low environmental concentrations of hydrocarbons and

that sediments and water are generally free from toxicity. These findings suggest that major human activities such as commercial fishing and offshore oil and gas production since 1959 in State waters have had no significant effect on water quality in Cook Inlet.

There could be increases of nitrogen oxide concentration at the shoreline during exploration and production. Increased concentrations of sulfur dioxide and volatile organic

Insert map 8

compounds from spilled oil are expected to be less than from normal operations and last only a short period.

An oil spill near a sea lion rookery is likely to contact up to 50 percent of the local population. Adult mortality is not likely to occur, but considerable pup mortality could result, accelerating the current population decline. Helicopter flights and vessel traffic should not disturb most of the seal populations. Oil spills could result in some mortality among newborn or severely stressed adult seals.

Oil spills are expected to affect less than 5 percent of the peregrine falcon population, and mortality is expected to be minimal. Entanglement in debris and ingestion of plastics should be minimal. The effect of air traffic is likely to be limited to within 0.5 kilometer of the flight path. Construction activities could cause a reduction in shorebird productivity. Routine operations are not expected to cause impacts to diving ducks in spring and winter/spring concentration areas. Routine offshore activities could affect up to a few hundred individuals of geese populations. There could be a disturbance and mortality of seabirds, the major impact-producing factor being spilled oil.

Oil spills contacting migratory salmon populations could have adverse impacts on small groups. The numbers affected would be small in proportion to the total, and any oil spill should have only a small-scale, small-area, and short-term effect. Exploration and development are not likely to have an appreciable effect on groundfish populations. Shellfish populations might be displaced from very small habitat areas by drilling discharges and offshore construction. No appreciable effect on regional shellfish populations is expected.

The primary effects on wetland-estuarine habitats are expected to come from pipeline-landfall construction and oil spills. Turbidity effects from pipeline burial are expected to be short term. Oil spill contamination would have local adverse effects on the diversity or productivity of invertebrate communities.

If oil spills occurred, a dramatic increase in social stress in subsistence communities could result, producing an extreme sense of loss and dislocation. Changes in subsistence harvests from oil spills would not be expected to last more than 1 year, with effects to the sharing networks and task group structures likely to be small and intermittent.

Offshore oil and gas operations could impact commercial fishing operations, possibly resulting in a loss of catch and direct employment and damage or loss of fishing gear. A large spill could result in a loss of \$9-43 million per year to south Alaska (Cook Inlet and Gulf of Alaska) fisheries for 2 years following the spill.

Impacts on recreation and tourism would be the interruption of ocean views by platforms and rigs and disturbances caused by noise and wave action from helicopters and marine-support vessels. Additional impacts could result from the accidental deposition of trash and debris that could reach the shoreline. Also, the fouling of the beaches from an oil spill on the west side of the Kenai Peninsula could disrupt sport fishing and camping. Scenic resources on shorelines along the Alaska Peninsula could be affected for as long as a summer season from a large oil spill.

Potential effects on the Pacific Region as a result of spills of tankered Alaska OCS oil are discussed under Beaufort Sea Option 1 above.

**Valuation of Option 2.** The total net value of benefits resulting from anticipated hydrocarbon production under this option would be zero since no activity would take place.

**Environmental Impacts Associated with Option 2.** This option is examined in the programmatic final EIS as part of Alternative 2.

The choice of this option would eliminate activities associated with other options proposing a sale in the planning area. Environmental impacts from presale seismic activity, exploration drilling, and placement of platforms and pipelines would not occur. Activity and environmental impacts from development on leases purchased as a result of a scheduled intervening lease sale could take place. Potential effects on the Pacific Region as a result of spills of tankered Alaska OCS oil under the proposed action would be eliminated.

## Gulf of Alaska

### Selected Comments

Alaska's Division of Governmental Coordination noted that the nearshore area between Cross Sound and Dry Bay and tracts at Fairweather Ground are included in the program area and requested that those areas be seriously considered for deferral during the evaluation and decision process for the proposed lease sale. The AMCC cited previous comments recommending no leasing in the Gulf of Alaska area based on local opposition, declining industry interest, and the cancellation of the planned State sale in this area. The Coastal/Oceans Forum of the Sierra Club expressed opposition to new leasing in this program area.

The API and the AOGA expressed support for the Alaska lease sales scheduled in the Proposed Program. The AOGA recommended modifying the proposed schedule if Sale 158 in the 5-year program for 1992-1997 is not held before that program ends in July 1997. ARCO Alaska expressed a general interest in all Alaska areas that are proposed for leasing and suggested revising the Alaska schedule if Sale 158 is delayed past July 1997. Phillips cited previous comments specifically endorsing the proposed Gulf of Alaska sale, and Marathon cited previous comments expressing general interest in the area.

The DOE commented that Alaska OCS resources potentially can make a great contribution to U.S. energy supplies in the long run.

In response to a request for interest in proposed Alaska OCS lease sales remaining on the 5-year schedule for 1992-1997 that was published in the *Federal Register* on April 10, 1996, the MMS received indications from industry that there was no interest in leasing in the Gulf of Alaska at that time but the area should continue to be analyzed and considered for the 5-year program for 1997-2002. On May 6, 1996, the MMS announced that it would not hold Sale 158 and would continue to consider the Gulf of Alaska in the formulation of the 5-year program for 1997-2002.



Additional information concerning comments—including statements offered at public meetings held by the MMS during the comment period following issuance of the Proposed Program—is provided in appendix 1.

## Options

- (1) Proposal as adopted for Proposed Program—sale in 2001 in program area (map 9)
- (2) No sale
- (3) Other

**Valuation of Option 1.** The net social value resulting from anticipated hydrocarbon production under this option is estimated to be negligible in the Base Case and \$165 million in the High Case. No additional microeconomic benefits are assumed in the Base Case, and additional microeconomic benefits are estimated to be \$55 million in the High Case.

**Environmental Impacts Associated with Option 1.** This option is examined in the programmatic final EIS as part of Alternative 1.

Activities resulting from the proposed sale could lower water quality near those activities for a short time.

An oil spill near a sea lion rookery in the western Gulf of Alaska in summer could result in mortality among pups and stressed adult seals.

Oil spills would affect little of the peregrine falcon population, and mortality should be minimal. Entanglement in debris and ingestion of plastics are expected to be minimal. If there are multiple, large-scale tanker spills in the Gulf of Alaska, where the bald eagle population is concentrated, they could cause mortality potentially involving a loss of 50 to 150 individuals. Routine operations are not expected to cause measurable impacts to diving ducks in spring and winter/spring concentration areas. Routine offshore activities could affect up to a few hundred individuals of geese populations. There could be a disturbance and mortality of seabirds, primarily from impacts of spilled oil.

Oil spills contacting migratory salmon populations could have adverse impacts on small groups. Exploration and development are not likely to have an appreciable effect on groundfish populations. Shellfish populations might be displaced from very small habitat areas by drilling discharges and offshore construction.

If oil spills occurred, a dramatic increase in social stress would be expected in subsistence communities, producing a sense of loss and dislocation. Changes in subsistence harvests from oil spills would not be expected to last more than 1 year, with effects to the sharing networks and task group structures likely to be small and

intermittent. Effects include reducing the availability or accessibility of important subsistence resources.

Offshore oil and gas operations could cause impacts to commercial fishing operations. Operations could cause a loss of catch, loss of direct employment, and damage or loss of fishing gear. A large spill could result in a loss of \$9-43 million per year to south Alaska (Cook Inlet and Gulf of Alaska) fisheries for 2 years following the spill.

Potential effects on the Pacific Region as a result of spills of tankered Alaska OCS oil are discussed under Beaufort Sea Option 1 above.

Insert map 9

**Valuation of Option 2.** The total net value of benefits resulting from anticipated hydrocarbon production under this option would be zero since no activity would take place.

**Environmental Impacts Associated with Option 2.** This option is examined in the programmatic final EIS as part of Alternative 2.

The choice of this option would eliminate activities associated with a proposed sale in the planning area. Environmental impacts from presale seismic activity, exploration drilling, and placement of platforms and pipelines would not occur. Potential effects on the Pacific Region as a result of spills of tankered Alaska OCS oil under the proposed action would be eliminated.

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## PACIFIC REGION

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### **Proposed Program Decision**

The Proposed Program did not schedule any lease sales in the planning areas of the Pacific OCS Region.

### **Proposed Final Program Options**

No options related to leasing in the Pacific Region are presented for the Proposed Final Program. Comments regarding this region that were received by the MMS following issuance of the Proposed Program were similar to those submitted at previous stages of the 5-year program preparation process, and many respondents referenced their earlier comments (see appendix 1).

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## GULF OF MEXICO REGION

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### Proposed Program Decision

The Proposed Program scheduled annual sales in both the Western and Central Gulf of Mexico Planning Areas and one sale in 2001 in a portion of the Eastern Gulf of Mexico Planning Area.

### Proposed Final Program Options

#### Western Gulf of Mexico

#### Selected Comments

The Texas Natural Resource Conservation Commission commented on potential impacts that leasing in this area could have on Texas ozone nonattainment areas and stated that relevant analysis by the State will be necessary at subsequent steps in the process of OCS leasing and development. The DOE commented that the Proposed Program's lease sale schedule in the Central and Western Gulf of Mexico Planning Areas is responsive to the Nation's current and projected energy supply situation. The NOAA reiterated recommendations to list all blocks with live-bottom and chemosynthetic communities and to provide protective stipulations for those areas. The NOAA also recommended that the values of commercial and recreational fisheries in this area be included in the environmental sensitivity/marine productivity analysis (see part IV.C). The Coastal/Oceans Forum of the Sierra Club stated it is not opposed to new leasing in this area. The API, Chevron, Shell, and Texaco endorsed the Proposed Program schedule of lease sales in the Western and Central Gulf of Mexico areas, and Exxon, Marathon, and Phillips cited previous comments supporting those sales.

#### Options

- (1) Proposal as adopted for Proposed Program—annual sales in program area (map 10)
- (2) No sale
- (3) One sale in 1997, 1999, and 2001 in program area
- (4) Other

**Valuation of Option 1.** The net social value resulting from anticipated hydrocarbon production under this option is estimated to be \$1.1 billion in the Base Case and \$9.8 billion in the High Case. Additional microeconomic benefits are estimated to be \$132 million in the Base Case and \$1 billion in the High Case.

**Environmental Impacts Associated with Option 1.** This option is examined in the programmatic final EIS as part of Alternative 1.

As a result of activities from the proposed annual sales, there could be changes in water quality around onshore support complexes. Marine waters could be degraded from bottom

Insert map 10

disturbances, oil spills, and waste discharges. Emissions of pollutants into the atmosphere are expected to have concentrations that would not change onshore air quality.

Cetaceans could be subject to impacts related to routine drilling discharges, noise, and vessel traffic, platform removals using explosives, seismic surveys, and oil spills. There would be no discernible decline in marine or coastal bird populations. The effect on fish resources is expected to be minor on pelagic species such as mackerels, bluefish, and dolphin fish and to reef fish species such as grouper, snapper, scamp, and seabass.

There would be no decline in marine turtle populations and no change in distribution or abundance. Any deaths would be replaced through natural recruitment from the next generation.

Barrier beach configurations should not be altered beyond existing trends except in very localized areas downdrift from jettied or artificially maintained navigation channels.

There should be little damage to low-density chemosynthetic communities. If physical disturbance to high-density communities were to occur, impacts could be severe. There should be little or no damage to the topographic features.

Employment needs would be met primarily by the existing population and available labor force. A minor economic loss to commercial fisheries of the estuary dependent species such as menhaden, shrimp, blue crabs, and oysters could occur for one to two fishing seasons because of oil spills. Oil spills could result in partial closure of a few park and recreation areas. Potential impacts on recreation and tourism could result from the accidental deposition of trash and debris that could reach the shoreline. Tourist losses would be local. Platforms installed offshore as a result of implementation of proposed leasing and related activity, especially those within 25 miles offshore, will attract recreational fishermen and divers.

**Valuation of Option 2.** The total value of benefits resulting from anticipated hydrocarbon production under this option would be zero since no activity would take place.

**Environmental Impacts Associated with Option 2.** This option is examined in the programmatic final EIS as part of Alternative 2.

Forgone OCS production is likely to be replaced by imported oil transported by tanker. The imported oil replacing OCS oil and gas is anticipated to enter the United States primarily through the Gulf. The chance that this imported oil would result in one or more oil spills in the Gulf of Mexico region is 58 to 94 percent. Tanker spills are less controllable than pipeline or platform spills and could occur anywhere along tanker routes.

Activity resulting from past sales would continue, including the drilling of exploration wells, placement of platforms and pipelines, and the use of shore bases for support activities. Any reduction in impact-causing factors would be partially offset by the increased use of Gulf routes for tankers importing oil. Spills from such tankers would

result in some degradation of shorebird habitat and lethal effects for fish resources and would cause a dieback of more wetlands and estuarine habitat than would occur as a result of proposed leasing. In addition these spills, should they contact land, could result in a greater number of beach closures than could be expected if the oil were produced domestically.

**Valuation of Option 3.** The net social value resulting from anticipated hydrocarbon production under this option would be \$670 million in the Base Case and \$5.9 billion in the High Case. Additional microeconomic benefits are estimated to be \$81 million in the Base Case and \$634 million in the High Case.

**Environmental Impacts Associated with Option 3.** This option is examined in the programmatic final EIS as part of Alternative 3.

Holding an areawide sale every other year in this planning area could result in a smaller number of oil spills from platform and pipeline accidents than under Option 1. Imported oil transported by tanker would substitute for some oil forgone by the reduced level of domestic OCS activity and could generate an increased probability of spills from foreign tankers. This would negate some of the environmental benefits that might otherwise result from the adoption of this option.

There would be a smaller amount of bottom disturbed and less area removed from multiple uses, but the availability of alternative fishing sites for recreational fishermen also would be reduced.

Employment demand is anticipated to be 40 percent lower than for annual sales, resulting in some underemployment or unemployment, causing stress to local agencies that assist individuals who are unemployed or are having financial difficulties. Other resources such as water and air quality, marine and terrestrial mammals, marine and coastal birds, coastal and seafloor habitats, and archeological resources would be affected by similar levels and types of impacts as would result from holding annual sales.

## **Central Gulf of Mexico**

### **Selected Comments**

The Governor of Alabama commented that the State supports a balanced and reasonable OCS leasing program that leads to exploration, development, and production in compliance with relevant Alabama laws, rules, and regulations and is consistent with the State's Coastal Zone Management Program. The DOE commented that the Proposed Program's lease sale schedule in the Central and Western Gulf of Mexico Planning Areas is responsive to the Nation's current and projected energy supply situation. The NOAA reiterated recommendations to list all blocks with live-bottom and chemosynthetic communities and to provide protective stipulations for those areas and also recommended that the values of commercial and recreational fisheries in this area be included in the environmental sensitivity/marine productivity analysis (see part IV.C). The Coastal/Oceans Forum of the Sierra Club stated it is not opposed to new leasing in this area. The API, Chevron, Shell, and Texaco endorsed the Proposed Program



schedule of lease sales in the Western and Central Gulf of Mexico areas, and Exxon, Marathon, and Phillips cited previous comments supporting those sales.

## Options

- (1) Proposal as adopted for Proposed Program—annual sales in program area (map 10)
- (2) No sale
- (3) One sale in 1998, 2000, and 2002 in program area
- (4) Other

**Valuation of Option 1.** The net social value resulting from anticipated production under this option is estimated to be \$5.1 billion in the Base Case and \$28 billion in the High Case. Additional microeconomic benefits are estimated to be \$755 million in the Base Case and \$3.6 billion in the High Case.

**Environmental Impacts Associated with Option 1.** This option is examined in the programmatic final EIS as part of Alternative 1.

As a result of activities from the proposed annual sales, there could be changes in water quality around navigation channels, pipeline canals, and support complexes. Oil spills would represent a localized and low-level impact to coastal waters. Marine waters could be degraded from bottom disturbances, oil spills, and waste discharges. Emissions of pollutants into the atmosphere are expected to be in concentrations that would not change onshore air quality.

Cetaceans could be subject to impacts related to routine drilling discharges, noise, and vessel traffic, platform removals using explosives, seismic surveys, and oil spills. There would be no discernible decline in marine or coastal bird populations. The effect on fish resources is expected to be minor on estuary-dependent species such as menhaden, shrimp, blue crabs, and oysters, on pelagic species such as mackerels, bluefish, and dolphin fish, and on reef fish species such as grouper, snapper, scamp, and seabass.

Wetlands could be eroded along navigation channels from vessel traffic. Barrier beach configurations should not be altered beyond existing trends in very localized areas downdrift from jettied or artificially maintained navigation channels.

There should be little damage to low-density chemosynthetic communities. If physical disturbance to high-density communities were to occur, impacts could be severe over a limited area. There should be little or no damage to topographic features. Impacts to other live-bottom communities are expected to be minor in scope and primarily sublethal in nature.

Employment needs would be met primarily by the existing population and available labor force. Some minimal impacts to traditional occupations and wages could occur as a result of switching to higher paying jobs in the petroleum industry.

A minor economic loss to commercial fisheries of the estuary-dependent species such as menhaden, shrimp, blue crabs, and oysters could occur for one to two fishing seasons, principally because of oil spills. Oil spills could result in partial closure of a few park and recreation areas. Potential impacts on recreation and tourism could result from the accidental deposition of trash and debris that could reach the shoreline. Tourist losses would be local. Platforms installed offshore as a result of implementation of proposed leasing and related activities, especially those within 25 miles offshore, would attract recreational fishermen and divers.

**Valuation of Option 2.** The total value of benefits resulting from anticipated hydrocarbon production under this option would be zero since no activity would take place.

**Environmental Impacts Associated with Option 2.** This option is examined in the programmatic final EIS as part of Alternative 2.

Forgone OCS production is likely to be replaced by imported oil transported by tanker. The imported oil replacing OCS oil and gas is anticipated to enter the United States primarily through the Gulf. The chance that this imported oil would result in one or more oil spills in the Gulf of Mexico region is 58 to 94 percent. Tanker spills are less controllable than pipeline or platform spills and could occur anywhere along tanker routes.

The impacts resulting from the no action option are those associated with the alternative energy substitution for the proposed offshore program. These impacts are associated with oil spills from tankers. Activity resulting from past sales would continue, including the drilling of exploration wells, placement of platforms and pipelines, and the use of shore bases for support activities. This reduction in potential impact-causing factors related to a leasing program would be partially offset by the increased use of Gulf routes for tankers importing oil.

Spills from tankers carrying imported oil would result in some degradation of shorebird habitat and lethal effects for fish resources and would cause a dieback of more wetlands and estuarine habitat than would occur as a result of the implementation of a 5-year program. In addition these spills, should they contact land, could result in a greater number of beach closures than could be expected if the oil were produced domestically.

**Valuation of Option 3.** The net social value resulting from anticipated hydrocarbon production under this option is estimated to be \$3.1 billion in the Base Case and \$16.8 billion in the High Case. Additional microeconomic benefits are estimated to be \$459 million in the Base Case and \$2.2 billion in the High Case.

**Environmental Impacts Associated with Option 3.** This option is examined in the programmatic final EIS as part of Alternative 3.

Holding an areawide sale every other year in this planning area could result in a smaller number of oil spills from platform and pipeline accidents. Imported oil transported by tanker would substitute for some oil forgone by the reduced level of activity and could generate an increased probability of spills. This would negate some of the environmental benefits that might otherwise result from the adoption of this alternative.

A smaller number of platforms would result in less bottom disturbed and less area removed from multiple uses, but it would also reduce the availability of alternative fishing sites for recreational fishermen.

Employment demand in the Gulf of Mexico is anticipated to be 40 percent lower than for annual sales, which could result in some underemployment or unemployment, causing stress to local agencies that assist individuals who are unemployed or are having financial difficulties. Other resources such as water and air quality, marine and terrestrial mammals, marine and coastal birds, coastal and seafloor habitats, and archaeological resources would be affected by similar levels and types of impacts as would result from annual sales.

## **Eastern Gulf of Mexico**

### **Selected Comments**

In a letter dated April 15, 1996, the Governor of Alabama commented that the State supports a balanced and reasonable OCS leasing program that leads to exploration, development, and production in compliance with relevant Alabama laws, rules, and regulations and is consistent with the State's Coastal Zone Management Program. He also expressed support for the proposed Eastern Gulf sale in 2001 and encouraged the MMS to further explore the addition of 384 blocks in deep water to the program area as provided in Proposed Program Option 3. In a subsequent letter dated July 30, 1996, the Governor modified his previous comments by requesting that blocks within 15 miles of the coast of Alabama be excluded from leasing consideration. In doing so he cited the resolutions adopted by local governments and groups, as well as the House of Representatives of the Alabama Legislature, expressing concerns about leasing that could lead to offshore oil and gas structures that would be visible from shore (see relevant comment summaries below). In a letter dated May 3, 1996, the Alabama Department of Conservation and Natural Resources expressed support and encouragement for the proposed lease sale in 2001.

The Governor of Florida reiterated that he is pleased that no new leasing is proposed within a 100-mile buffer around the State and stated that he wants Florida to be an active participant in proposed Sale 181. The Florida Department of Environmental Protection commented that it has no objection to the lease sales considered under Proposed Program Option 1 or 3 and encouraged close coordination between the State and the MMS in preparing for Sale 181 in accordance with the OCS Lands Act, NEPA, and the Federal consistency provisions of the Coastal Zone Management Act (CZMA).

The Department of Environmental Protection also recommended that increased leasing and development of deep-water tracts be accompanied by adequate environmental studies and appropriate lease stipulations and stated that these issues should be evaluated in detail in the EIS's prepared for specific lease sales.

The Mayor of Bayou La Batre, Alabama, expressed support for leasing in the Eastern Gulf. The City Council of Orange Beach, Alabama, submitted a resolution expressing opposition to further construction of any visible offshore oil and gas structures within 15 miles of the coast and any new leasing that could result in such construction. The South Florida Regional Planning Council expressed support for the Governor's position and commended the Proposed Program for conforming with that position. The West Florida Regional Planning Council stated that the proposed sale is in accord with State plans and the goals and objectives of the Council. The Council's Environmental Planning Staff cited concerns and issues related to citizen opposition, military use, and tourism and recommended establishing a technical advisory committee including Federal, State, and local governments and other parties to address OCS planning.

The Bay County Audubon Society, the Mobile Bay Audubon Society, the Bay County Republican Executive Committee, the Little Lagoon Preservation Society (Gulf Shores, Alabama), and the Legal Environmental Assistance Foundation (Tallahassee, Florida) expressed opposition to leasing in this area, citing environmental and socioeconomic concerns. The Coastal/Oceans Forum of the Sierra Club expressed opposition to the proposed lease sale. The Citizens Association of Bonita Beach, Florida, expressed opposition to leasing off Florida. The Alabama Gulf Coast Area Chamber of Commerce submitted resolutions adopted by itself and the following entities expressing opposition to further construction of any visible offshore oil and gas structures within 15 miles of the coast and any new leasing that could result in such construction: the city councils of Gulf Shores, Orange Beach (also cited above), and Foley; the Commission of Baldwin County; and the Gulf Coast Convention and Visitors Bureau. The Board of Directors of the Romar Place Condominium Association (Gulf Shores) requested that offshore oil and gas rigs be banned from the immediate coastline, stating that rigs within 20 miles of the coast would be visible and would diminish property values and adversely affect tourism in the area. Dauphin Island Sea Lab expressed support for OCS leasing off Alabama.

The DOE commented that areas such as the Eastern Gulf potentially can make a great contribution to U.S. energy supplies in the long run and endorsed the lease sale scheduled in the Proposed Program. The DOE also expressed support for leasing in the expanded area considered as an alternative in the Proposed Program if an appropriate level of consensus can be reached. The Department of the Navy endorsed the Proposed Program, indicating that additional consultation should take place if significant changes are considered. The NOAA recommended that full consideration be given to the State of Florida's concerns regarding leasing in this planning area within 100 miles of the State's coast. The U.S. Fish and Wildlife Service expressed support for leasing within the program area selected in the Proposed Program.

The API commented in favor of Proposed Program Option 3(b)—sales in 1999 and 2001 in the expanded program area including 384 additional deep-water blocks—in order to provide industry the opportunity to explore the gas-prone area in deep water as

well as the blocks bordering the Central Gulf of Mexico Planning Area. Marathon expressed support for Option 3(b), stating that the proposed deep-water addition should not have any significant impact on the environment since the area is far from shore and would be associated with ongoing Central Gulf deep-water activities and infrastructure. Mobil and Texaco expressed strong support for Option 3(b). Exxon cited previous comments in support of leasing in the Eastern Gulf and recommended that a sale be scheduled there earlier in the program. Chevron commented in favor of annual areawide leasing in the entire Eastern Gulf but also submitted the following options in order of preference: (1) open all of the planning area beyond 100 miles of Florida to annual or periodic leasing and institute a regional task force to address future expansion into the 100-mile area; (2) adopt Option 3(b); (3) adopt Option 3(a); and (4) adopt Option 1. Shell stated that it is philosophically opposed to Florida's position favoring exclusion of the area within 100 miles of the State but commented in favor of adding the deep-water blocks as proposed and encouraged the MMS to offer the additional acreage as soon as possible.

Over 80 citizens submitted written comments concerning the proposal to lease in this area. Most of those comments cited potential environmental and socioeconomic impacts and expressed opposition to the proposal.

Additional information concerning comments—including statements offered at public meetings held by the MMS during the comment period following issuance of the Proposed Program—is provided in appendix 1.

## Options

- (1) Proposal as adopted for Proposed Program—sale in 2001 in program area (map 11)
- (2) No sale
- (3) Expand program area by adding 384 blocks in deep water (map 12) for:
  - (a) Sale in 2001 in program area (map 12); or
  - (b) Sales in 1999 in deep-water portion of program area (map 13) *and* in 2001 in program area (map 12)
- (4) Exclude 22 blocks within 12 statute miles of the 3-mile limit of Alabama State waters (i.e., 15 miles from shore) from the program area to be considered for lease sale in 2001 under Option 1 (map 14) or Option 3 (map 15)
- (5) Other

**Valuation of Option 1.** The net social value resulting from anticipated hydrocarbon production under this option [including Option 1(a)] is estimated to be \$136 million in the Base Case and \$582 million in the High Case. Additional microeconomic benefits are estimated to be \$22 million in the Base Case and \$64 million in the High Case.

**Environmental Impacts Associated with Option 1.** This option is examined in the programmatic final EIS as part of Alternative 1.

Emissions from OCS activities, especially those in deeper waters, would not be a primary cause of any onshore area exceeding air-quality standards. There could be minor, long-term changes in water quality in navigation channels, pipeline canals, and onshore support complexes in eastern Louisiana, coastal Mississippi, and Alabama. Marine waters could be degraded from bottom disturbances, oil spills, and waste discharges. Bottom disturbances from platform and pipeline emplacements and removals, rig activities, and blowouts should result in minor, localized, temporary impacts due to sediment resuspension.

Air and surface traffic and contact with accidentally deposited trash and debris may affect marine and coastal birds. Those affected by oil would be replaced through recruitment from the next generation. There should be no decline in an endangered or threatened bird population. No significant adverse effects to Alabama, Choctawhatchee, and Perdido Key beach mice are expected to occur. Marine mammals would likely experience some sublethal effects and nonfatal exposure to contaminants or debris that are both chronic and sporadic.

The effect on estuary-dependent species such as shrimp and oysters, to pelagic species such as mackerels and dolphin fish, and to reef fish species such as grouper, and seabass is expected to be undetectable. A minor economic loss to commercial fisheries of estuary-dependent species such as menhaden and oysters could occur for one to two fishing seasons.

There should be little damage to chemosynthetic communities. The impact to live-bottom communities such as found on the Pinnacle Trend is expected to be minor in scope and primarily sublethal in nature; the effects are expected to be limited in areal extent.

The States of Louisiana, Mississippi, and Alabama collectively would provide almost 76 percent of the total employment. The least affected State would be Florida, accounting for less than 1 percent of the employment. Gulf Island National Seashore and other coastal beaches along Mississippi and Alabama would be affected by helicopter and boat traffic. Potential impacts on recreation and tourism could result from the accidental deposition of

Insert map 11

Insert map 12

Insert map 13



Insert map 14

Insert map 15

trash and debris that could reach the shoreline. An oil spill is most likely to affect beaches along the coasts of east Louisiana, Mississippi, and Alabama and result in temporary closure of park and recreation areas.

**Valuation of Option 2.** The total net value of benefits resulting from anticipated production under this option would be zero since no activity would take place.

**Environmental Impacts Associated with Option 2.** This option is examined in the programmatic final EIS as part of Alternative 2.

Impacts associated with leasing in this area would not occur. The impact-causing activities that would be eliminated are those that occur in the immediate vicinity of drilling rigs, production platforms, and pipelines. Spillage of oil from OCS operations in the area would not occur, but oil spills originating from operations in the adjacent Central Gulf Planning Area and in this area resulting from the development of leases acquired from past sales could still affect resources depending on wind and currents.

Forgone OCS production is likely to be replaced by imported oil transported by tanker. The imported oil replacing OCS oil and gas is anticipated to enter the United States primarily through the Gulf. The chance that this imported oil would result in one or more oil spills in the Gulf of Mexico region is 58 to 94 percent. Tanker spills are less controllable than pipeline or platform spills and could occur anywhere along tanker routes. Tankers moving through the Eastern Gulf could spill oil in areas not being considered for leasing, thereby causing impacts to parts of the planning area and coastline that would not be affected by leasing activity and accidents.

**Valuation of Option 3.** The net social value resulting from anticipated production under Option 3(a) is estimated to be \$145 million in the Base Case and \$602 million in the High Case. Additional microeconomic benefits under Option 3(a) are estimated to be \$23 million in the Base Case and \$65 million in the High Case. The net social value resulting from anticipated production under Option 3(b) is estimated to be \$154 million in the Base Case and \$672 million in the High Case. Additional microeconomic benefits under Option 3(b) are estimated to be \$25 million in the Base Case and \$75 million in the High Case.

**Environmental Impacts Associated with Option 3.** This option is examined in the programmatic final EIS as part of Alternative 5.

The expected effects resulting from the 2001 sale considered under this option would be similar to those under Option 1 but might be slightly greater due to additional activity that could take place as a result of the deep-water expansion of the program area. Addition of a deep-water sale in 1999 also would increase effects only slightly, because activities would be far from shore and would be associated with ongoing Central Gulf deep-water activities and related infrastructure.

**Valuation of Option 4.** The net social value resulting from anticipated hydrocarbon production if Option 4 is selected along with Option 1 would be \$17 million in the Base

Case and \$266 million in the High Case. Additional microeconomic benefits would be \$10 million in the Base Case and \$35 million in the High Case.

If Option 1 is selected in conjunction with Option 3, net social value would be \$26 million in the Base Case and \$287 million in the High Case. Additional microeconomic benefits would be \$11 million in the Base Case and \$36 million in the High Case.

**Environmental Impacts Associated with Option 4.** This option is examined in the programmatic final EIS as part of Alternative 4.

If the 22-block exclusion is adopted along with the proposal, the potential for nearshore oil and gas activity—and associated impacts—would be eliminated. Activity in deeper waters would be at the same level as expected for the proposal, and deep-water impact types and levels would be the same.

Bottom disturbance from platform placement, causing localized impacts to water quality, would not occur in the excluded area. The visual impacts of rigs and platforms cited by local commenters would be reduced. Impacts to turtle nesting areas along the coast and impacts to historic sites and shipwrecks would be reduced. The opportunity for recreational fishing focusing on stocks enhanced by platform placement in the area would be eliminated. Employment opportunities and demographic change would be reduced slightly.

Adoption of the 22-block exclusion from the expanded alternative program area considered under Option 3 would have similar consequences.

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## ATLANTIC REGION

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### Proposed Program Decision

The Proposed Program scheduled no lease sales in the Atlantic Region.

### Proposed Final Program Options

No options related to leasing in the Straits of Florida, South Atlantic, and North Atlantic Planning Areas are presented in this decision document. Appendix 1 includes summaries of the comments concerning these areas that were received by the MMS.

Pursuant to NEPA, the Secretary is required to consider alternatives to the proposed action, including one that would schedule lease sales in more areas. The programmatic final EIS analyzes an alternative (Alternative 5) that would schedule more areas—including blocks in the vicinity of the former Hudson Canyon Unit in the Mid-Atlantic Planning Area—which were considered but not selected for leasing in previous proposals for the 5-year program for 1997-2002. This decision document analyzes the range of alternatives considered in the EIS and thus evaluates a Mid-Atlantic lease sale.

### Mid-Atlantic

### Selected Comments

The Governor of Rhode Island, the Connecticut Department of Environmental Protection, the New York Department of Environmental Conservation, the New Jersey Department of Environmental Protection, and the Governor of North Carolina endorsed the Proposed Program's exclusion of the Atlantic planning areas from leasing consideration. Those commenters and the Delaware Geological Survey said they look forward to working further with the MMS concerning future OCS leasing, and the New York Department of Environmental Conservation expressed support for establishing a working group of affected constituents for the Mid-Atlantic Planning Area. The Virginia Department of Environmental Quality reiterated disappointment that no lease sales have been scheduled for the Atlantic Region in the next 5-year program. The Mayor of Wilmington, North Carolina, commented that the Mid-Atlantic lease sale being analyzed under EIS Alternative 5 could have direct adverse impacts on the Wilmington area.

The DOE expressed hope that the MMS would be able to consult with affected constituents to plan for an actual Mid-Atlantic lease sale by 2002 if an appropriate level of consensus can be reached so industry can justifiably expect to be able to develop leases that would be acquired. The National Aeronautics and Space Administration (NASA) reiterated that it would want another opportunity to comment if a lease sale is scheduled for the Mid-Atlantic. The Coastal/Oceans Forum of the Sierra Club endorsed the decision to schedule no lease sales in the Atlantic Region. Phillips cited previous comments recommending that no sales be scheduled and that drilling be allowed to proceed on existing leases. Marathon cited previous comments stating it has

no interest in the Mid-Atlantic until pending litigation is settled. Chevron cited previous comments expressing support for leasing in the Mid-Atlantic and South Atlantic Planning Areas and indicating specific interest in prospects trending with the Manteo Unit located off North Carolina.

## **Options**

- (1) Sale in 2000 in program area (map 16), limiting the number of blocks offered at the time of the sale to 50
- (2) No sale
- (3) Other

**Valuation of Option 1.** The net social value resulting from anticipated hydrocarbon production under this option is estimated to be negligible in both the Base Case and the High Case, and no additional microeconomic benefits are estimated in either case.

**Environmental Impacts Associated with Option 1.** This option is examined in the programmatic draft EIS as part of Alternative 5.

Emissions from any exploration, development, and production activities would have negligible impacts on onshore air quality. Routine discharges and bottom disturbance, both offshore and coastal, should be a restricted point of disturbance.

Routine activities should not affect populations of coastal birds, seabirds, and endangered and threatened birds. Finfish or shellfish could experience sublethal impacts such as reduced biogenic activity or disease. No measurable decline in entire populations is expected.

Impacts to shorelines are expected to occur only at pipeline landfall locations, the maximum area affected extending approximately 50 feet across the beach. Changes in the benthic community from anchoring, drilling wells, and installing pipelines would be local and not expected to last more than 1 to 3 years. Impacts on submarine canyons from muds and cuttings could result in alterations to the canyon communities, including declines in abundance and distribution of canyon species.

Commercial fisheries should not experience losses in fish and shellfish stocks. Economic losses are expected to be limited to a few fishermen and last less than 1 year.

Potential impacts on recreation and tourism could result from the accidental deposition of trash and debris that could reach the shoreline.

**Valuation of Option 2.** The total value of benefits resulting from anticipated production under this option would be zero since no activity would take place.

**Environmental Impacts Associated with Option 2.** This option is examined in the programmatic final EIS as part of Alternative 2.

The Mid-Atlantic is the destination for substantial numbers of crude and product tankers under normal circumstances, but the level of such traffic is not expected to change significantly under the no action option. Most additional tanker traffic needed to replace

Insert map 16



the oil that would be forgone by not scheduling any lease sales in the 1997-2002 period would enter the United States through Gulf of Mexico and California ports. The threat of foreign tanker-related oil spills to Mid-Atlantic resources would not be affected by this option.

### ***Technical Adjustments to the Configuration of OCS Planning Areas***

The Draft Proposed Program adjusted the configuration of OCS planning areas by moving the Chukchi Sea/Beaufort Sea boundary to 156° W. longitude and by adding and deleting whole and partial official protraction diagrams in the following planning areas: Beaufort Sea; Aleutian Arc; Gulf of Alaska; Washington-Oregon; Northern California; Central California; Southern California; and South Atlantic. Those adjustments were depicted in maps 12-15 in the Draft Proposed Program decision document, were reflected in the maps in the Proposed Program and draft EIS, and are reflected in the maps included in this document and the final EIS. The Proposed Final Program includes no options for further technical adjustments to the configuration of OCS planning areas. Updated descriptions of all 26 OCS planning areas are provided in a document entitled *Planning Area Descriptions of the Outer Continental Shelf* (1996) that is available from the MMS Technical Communication Services office.

## **B. Assurance of Fair Market Value**

Relevant considerations for formulating and selecting options to assure the receipt of fair market value for OCS leases and the rights they convey are discussed below. The full range of options available for the Secretary's consideration in deciding on a Proposed Final Program for 1997-2002 is presented. The options selected by the Secretary are summarized in part I.

### **Proposed Program Decision**

The Proposed Program decision was to maintain the current minimum bid level of \$25 per acre with sale-by-sale reconsideration and to continue the two-phase bid adequacy process. On March 29, 1996, the MMS announced that the process for evaluating bid adequacy would be modified by eliminating the three-bid rule (61 *FR* 14162). The modification was effected for Central Gulf of Mexico Sale 157, which was held on April 24, 1996. See part IV.D for further discussion of this modification.

A brief description of existing procedures for assuring the receipt of fair market value, as recently modified, is included in part IV.D of this decision document. Appendix 10 of the April 1992 SID contains background information with more detailed descriptions of the procedures.

### **Comments**

Nine companies and industry groups included comments on fair market value issues in their responses to the *Federal Register* Notice of February 7, 1996, announcing the Proposed Program for 1997-2002. Most of them opposed elimination of the three-bid rule and the selection, for Sale 157, of the option to increase rental rates for deep-water leases. One company recommended elimination of the bid adequacy procedures, instead allowing the competitive market to determine what bids are fair. Three

respondents voiced support of the \$25-per-acre minimum bid rate. Two others suggested that the MMS reconsider lease terms for the Alaska OCS areas, proposing terms more in line with those offered by the State of Alaska on its leases.

## **Proposed Final Program Options**

While no new options explicitly are included for consideration in this Proposed Final Program, the MMS analysis of fair market value issues is continuing. Changes in the minimum bid level, in combination with other policy changes, might be considered in sale-specific documents following completion of MMS analysis relating to the April 1995 Call for Comment on Proposed Policy Options. Implementation of the Outer Continental Shelf Deep Water Royalty Relief and the resulting interim rule (requiring suspension of royalties on any new deep-water leases issued during the next 5 years for most of the Gulf of Mexico OCS acreage) affects internal estimates of the value of affected leases and may lead to one or more additional changes in leasing policy and the terms and conditions for these new leases. Any such changes—or other changes due to new legislation not yet enacted—are likely to be considered and, if adopted, implemented through the decision process for individual lease sales.

The options for the Proposed Final Program decision are listed below. Option 1 would retain current policy toward the minimum bid and the bid adequacy process. The Secretary also has the option to raise or lower the minimum bid level or to make other changes in minimum bid policy. Also, as in previous 5-year programs, in accordance with Section 18(a)(4), modifications may be made to the bid adequacy procedures to incorporate knowledge gained from their actual use in lease sales, to adapt to new legislation, or to respond to changes in the basic, underlying leasing process.

### **Options**

- (1) Maintain minimum bid level at \$25 per acre, subject to sale-by-sale reconsideration, and continue current two-phase bid adequacy process, as modified by announcement of March 29, 1996
- (2) Other

## IV. PROPOSED FINAL PROGRAM ANALYSES

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This part presents the analyses of section 18 criteria and information used to formulate the Proposed Final Program options presented in part III.

### A. Analysis of Energy Needs

The Draft Proposed Program analysis updated the discussion of energy needs in the April 1992 SID for the 5-year program for 1992-1997. The analysis indicated that the outlook for America's energy future had changed only slightly since 1992. It found that projected domestic petroleum production had declined and expected levels of oil imports had risen— trends that will put more strain on the Nation's economy and could place the United States at greater risk of an economic shock like those that have occurred in the past. The analysis further concluded that environmentally sound OCS leasing, conducted in consultation with affected parties, has the potential to provide added supplies of secure, environmentally compatible oil and gas to help meet the Nation's energy needs. A review of that analysis, using updated forecasts from the *Annual Energy Outlook* published by the DOE in January 1996, supports those basic conclusions. Although the current forecasts of demand for imported oil are more optimistic than some previous forecasts, they still show a growth in net oil imports from 45 percent of oil consumption in 1994 to 56 percent in 2015, far surpassing the current record of 46 percent.

While continued dependence on imported oil has national security implications, it is prudent to take the long-term view of this problem. An aggressive lease sale schedule developed without the concurrence of potentially affected parties could provoke permanent leasing moratoria or other policies that would prevent effective development of domestic resources in the future. Currently, this Nation benefits from relatively inexpensive oil imports from many producing nations, and this Administration's initiatives in brokering peace in the Middle East continue to bear fruit. A carefully crafted 5-year program could both contribute to the Nation's energy supply and provide time to address the controversies that have led to bipartisan congressional and executive moratoria on OCS lease sales and development.

The Proposed Program analysis discussed the Department of Energy's National Energy Policy Plan (August 1995), summarized an analysis of energy alternatives to development of OCS oil and natural gas resources, and described regional energy needs. Because little has changed that would affect the validity or currency of that analysis, this section provides only summaries and selected excerpts from the corresponding section in the previous document.

#### National Energy Policy Plan

The National Energy Policy Plan, entitled *Sustainable Energy Strategy*, presents the Clinton Administration's energy policy. The concept of sustainable development guides the energy policy process and motivates three strategic goals: maximize energy productivity to strengthen the economy and improve living standards; prevent pollution to reduce the adverse environmental impacts associated with energy production, delivery, and use; and keep America secure by reducing vulnerability to global energy

market shocks. The environmentally sound development of the Nation's OCS resources will help further the achievement of each goal. Investments in and production of OCS oil and gas generate billions of dollars annually in bonuses, royalties, and taxes and create thousands of well paying jobs throughout the American economy. Production of offshore resources under proper environmental safeguards poses less risk of an oil spill than does importing foreign oil in tankers. Expanded use of natural gas, including that produced on the OCS, has substantial environmental benefits over other fossil fuels. Production of oil and gas from the OCS directly reduces the amount of oil that must be imported from abroad, much of it from politically unstable regions, thereby lessening the threat to the U.S. economy posed by supply disruptions and higher prices.

In comments on the Draft Proposed Program the DOE referred to the goals and policies of the National Energy Policy Plan and stated explicitly that OCS oil and gas resources ". . . are a part of the Administration's commitment to develop a balanced energy resource portfolio."

## **Energy Alternatives**

Many comments received during the preparation of this and previous 5-year programs have expressed the opinion that the Federal Government should promote energy conservation and the development of alternative or renewable energy resources rather than consider leasing areas of the OCS for potential oil and gas development. Accordingly, the MMS updated the review of energy alternatives performed for the 5-year program for 1992-1997 in a paper entitled *Energy Alternatives and the Environment*, which is available from the MMS Technical Communication Services office and online from the MMS home page (<http://www.mms.gov>). The first major step taken in the review entailed a revised estimate of the most likely response of the economy to a situation in which the Department of the Interior does not schedule any OCS lease sales for the 1997-2002 period. This corresponds to Alternative 2—No Action—in the programmatic draft EIS.

### ***The Most Likely Alternative Energy Mix***

Table 2 shows the *most likely* set of energy alternatives that the economy would adopt if the *no action* alternative were chosen (resulting in the loss of oil and gas production that would be estimated to result from leasing during the period 1997 to 2002). The MMS generated the estimates in this table using its market simulation model that was developed to analyze energy alternatives and other economic aspects of the 5-year program. The model and the estimates in the table assume that basic economic decisions in the U.S. economy will continue to be made through the free market system. The government might also impose certain energy alternatives on the economy to accomplish various political and environmental goals. Alternatives that might be imposed by government are discussed later in this part and at greater length in the MMS paper cited above.

### ***Government-Imposed Energy Alternatives and Their Impacts***

The U.S. Government or the governments of States like California or those in the Northeast might choose to encourage or mandate use of one or more energy alternatives different from those chosen by the market. Mechanisms that might be used are taxes like a carbon tax or vehicle fuel tax, an integrated energy conservation program, or more specific mandated energy saving measures like automobile fuel economy standards and the requirement in California and portions of the Northeast that a certain percentage of new

**Table 2. Market Response to No OCS Leasing**

Sector	% of OCS Production	Quantity Involved	
		Base Case	High Case
<b>Oil</b>			
OCS Production (BBO)	-100	-1.54	-18.83
Onshore Production (BBO)	4	0.05	0.65
Imports (BBO)	88	1.36	16.64
Conservation (BBOE)	5	0.08	0.96
Switch to Gas (BBOE)	3	0.05	0.58
<b>Gas</b>			
OCS Production (Tcf)	-100	-11.12	-29.28
Onshore Production (Tcf )	41	4.58	11.18
Imports (Tcf)	12	1.38	3.25
Conservation (Tcf)	14	1.54	4.31
Switch to Oil (Tcf/BBOE)	33	3.62/0.64	10.54/1.88
Induced Oil Imports (BBO)	NA	0.57	1.65

The Base Case estimates assume a flat, real price of \$18 per barrel ( bbl) of oil and \$2.11 per Thousand cubic feet (Mcf) of gas. The High Case estimates assume \$30 per bbl of oil and \$ 3.52 per Mcf of gas.

vehicles sold after a given date be zero emission vehicles. The paper *Energy Alternatives and the Environment* discusses mechanisms for imposing alternatives at greater length. However, regardless of the mechanism chosen, it must operate through an energy alternative such as those examined in the analysis.

Government action is most likely to be directed at vehicle fuels and fuel consumption and electricity generation plants, fuels, and consumption. Narrowly focused measures are more likely than broad measures. In addition any measure favoring a particular

energy alternative or set of alternatives probably would have important environmental consequences, especially for air pollution minimization.

### ***Summary of National Energy Needs***

Many energy alternatives can and probably will contribute to the U.S. energy future. However, there is no new anticipated energy technology that is likely to make a significant contribution; indeed, during the span of the new 5-year program and related activities, the effect of all the new and renewable energy alternatives on the distribution of energy sources is expected to be minimal.

In addition, regardless of the attractiveness of some conservation efforts, nothing in the analysis of energy alternatives provides arguments contrary to the continued leasing of OCS oil and natural gas resources at a rate set by market forces. Thus, if conservation efforts are successful, firms will bid for fewer OCS tracts, but OCS resources will still provide a valuable addition to the domestic energy supply. Oil resources of the OCS help to reduce U.S. reliance on oil imports from potentially unstable regions of the world, and OCS natural gas resources provide a significant and potentially growing portion of the cleanest form of fossil fuel.

### **Regional Energy Needs and Resources**

Oil and natural gas account for about two-thirds of U.S. energy consumption. While the precise mix of energy sources varies from region to region, oil and gas are used extensively throughout the entire country. This part of the analysis examines regional energy resource production and consumption patterns and the factors that help shape them.

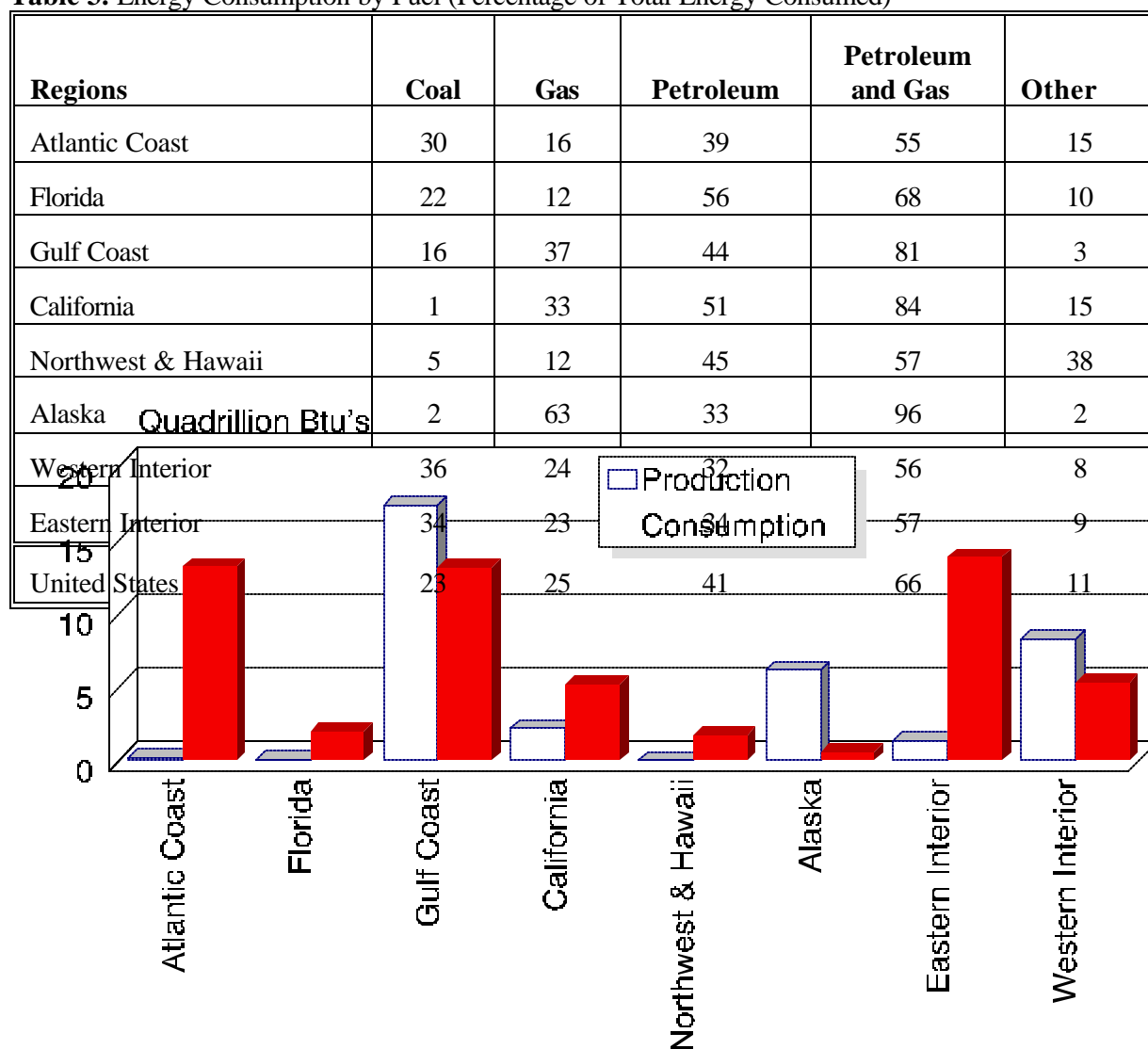
Table 3 shows, by fuel type, how U.S. energy consumption—a total of more than 80 quadrillion British thermal unit's (Btu) per year—is divided among eight geographic regions. As expected, based on their greater size and population, the Eastern Interior, Atlantic Coast, and Gulf Coast regions make up a significant majority of energy use. However, California and Florida together account for nearly 11 percent of all energy consumed in the United States. Consistent with the discussion above, other alternative and renewable forms of energy—solar, wind, biomass, etc.—generally contribute less than 1 percent of total energy supply in each of the regions. The *Other* category in the table consists almost entirely of nuclear power, especially in the Atlantic Coast region and in Florida, and hydroelectric power, especially in Washington and Oregon (Northwest and Hawaii region). Geothermal energy makes up about 2 percent of California's energy supply.

**Petroleum and Natural Gas.** Petroleum and natural gas are the predominant energy fuels in use in the United States. In each of the eight regions they account for more than half of the energy consumed as shown in table 3. Coal constitutes nearly one-fourth of the energy consumed, the vast majority of which is used for the generation of electric power. Petroleum and gas are used in a wide range of residential, industrial, and transportation applications as well as for generating electricity.

Although petroleum and gas are used across all eight regions, their production is more geographically limited as shown in figure 1. In the Atlantic Coast, Eastern Interior, Florida, and Northwest and Hawaii regions, consumption is several times larger than production. Although California is a major oil and gas producer, its residents consume more than twice the amount produced. Only in the Alaska, Gulf Coast, and Western Interior regions does the amount of oil and gas produced exceed the amount used. As a whole, the Nation produces just over 50 percent of the oil and about 90 percent of the gas it consumes, the difference is made up with imports. International sources of oil include Canada, South America, the North Sea, Africa, Southeast Asia, and the Middle East. The source of almost all imported natural gas is Canada.

Figure 1 includes oil and gas produced offshore in State waters but does not include oil and gas produced from the Federal OCS, which is similarly concentrated. All OCS production occurs off the coasts of Alabama, Mississippi, Louisiana, and Texas in the Gulf of Mexico and off the coast of California.

**Table 3. Energy Consumption by Fuel (Percentage of Total Energy Consumed)**



**Figure 1. U.S. Oil and Gas Production and Consumption in 1994**

## **B. Analysis of Environmental Concerns**

The OCS Lands Act, as amended, includes many provisions calling for environmental protection in managing the Nation's offshore oil and gas resources. The general purposes and policies articulated in the 1978 amendments to the statute point to the importance of applying safeguards to limit the risks of environmental damage and protecting the human, marine, and coastal environments. Specifically, in regard to the 5-year OCS leasing program, section 18 of the law mandates that decisions balance the potential for discovery of oil and gas resources and the potential for adverse environmental impacts. Thus, in developing a 5-year program it is important to solicit comments relating to environmental concerns and to consider and analyze the comments received carefully.

### **Comments Relating Environmental Concerns**

A number of the comments received during the preparation of the 5-year program for 1997-2002 have identified potential impacts associated with OCS oil and gas activities. The predominant concerns that have been raised relate to the risk of accidental oil spills and the ecological and socioeconomic effects associated with oil and gas exploration, development, and production. This decision document and the programmatic final EIS both include summaries of concerns related to the OCS oil and gas program that have been identified by commenters. Chapter I of the programmatic final EIS discusses those concerns in detail.

### **Environmental Analyses**

#### ***The Record of OCS Operations***

Worldwide, only 2 percent of the oil in ocean waters is the product of oil and gas operations, according to the National Academy of Sciences 1985 study, *Oil in the Sea: Inputs, Fates, and Effects*. Production from the United States OCS contributes less than one-tenth of 1 percent of the oil in ocean waters. About 70 percent of the oil polluting the oceans comes from municipal and industrial wastes and from tanker operations.



Following the Santa Barbara incident of 1969, industry improved technology, and the Federal Government developed more stringent regulation of OCS operations. By law there is a scheduled inspection of each OCS facility subject to environmental and safety regulations at least once a year. Also, the MMS conducts periodic unscheduled onsite inspections of OCS oil and gas facilities. Table 4 shows the volume of OCS oil and condensate produced and the number and volume of spills by year from 1970 - 1994.

### ***The Programmatic EIS***

The programmatic final EIS accompanies this program decision document for the Secretary's consideration. The EIS process began with the Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Program that was published in the *Federal Register* (59 FR 59328) on November 16, 1994, and called for information from interested and affected parties that could be used to determine the appropriate scope of the planned EIS. Scoping continued through the close of the comment period following publication of the Draft Proposed Program (60 FR 155). A draft EIS that analyzed the leasing schedule in the Proposed Program and four alternative leasing schedules was prepared and issued with the Proposed Program. A final EIS that analyzes the same proposal and the four alternatives—some of which have been modified to reflect comments—accompanies this Proposed Final Program decision document (see part III of this decision document and chapter II of the final EIS for descriptions of the proposed action and alternatives).

### ***Additional Environmental Considerations***

In preparing the programmatic EIS and performing the environmental analyses required by section 18, the MMS drew on a substantial amount of information and analytic results obtained from its Environmental Studies Program, which has funded approximately one-half billion dollars in studies since 1973. The report MMS 91-0028 lists and describes briefly the scientific studies that have been conducted from 1973 through 1989. Studies conducted since then are listed and described in various Environmental Studies Program Information System (ESPIS) reports. Abstracts of the ESPIS reports are now available online from the MMS home page (<http://www.mms.gov>).

The analyses of social costs and environmental sensitivity/marine productivity presented in part IV.C below also provide useful information concerning the potential effects of oil and gas leasing and related activities under the new 5-year program for 1997-2002.

## **C. Comparative Analysis of OCS Planning Areas**

The required comparative analysis of section 18 factors and considerations for the Proposed Final Program decision is presented below. This analysis addresses the section 18 criteria that lend themselves to quantification as well as those that do not.

Potential benefits of producing oil and gas from the Nation's OCS include reducing the country's international trade deficit and Federal budget deficit, displacing shipments of imported oil by large tankers—thereby reducing associated risks of oil spills, and providing a secure supply of the fuels used by the Nation for production and distribution of virtually all other products. The potential costs include the risk of damage to the

marine, coastal, and human environments and the associated effects on the values of other resources and uses.

Factors that are quantified to facilitate comparison among OCS planning areas include social benefits; environmental sensitivity and marine productivity; and regional costs developed for considering the equitable sharing of developmental benefits and environmental risks. The factors that are addressed qualitatively include environmental, ecological, and socioeconomic characteristics that would be extremely difficult or impossible to quantify in a valid and meaningful way; expressions of interest by the oil and gas industry; and relevant laws, goals, and policies identified by affected States. The comments submitted by interested and affected parties and other considerations pursuant to the OCS Lands Act, NEPA, and applicable judicial opinions also are addressed in this analysis.

## Social Value

### *Introduction*

The MMS performs a cost-benefit, or *net benefits*, analysis of the value of all available resources in the Proposed Final Program. The analysis examines the benefits, with the accompanying costs, to society associated with OCS oil and natural gas production. The results of the required comparisons of program areas provide one factor in determining the

**Table 4.** OCS Production and Spill Statistics for 1970-1994 (Crude Oil and Condensate)

Year	Barrels Produced	No. of Spills	Barrels Spilled
1970	354,175,830	13	83,894
1971	418,548,946	244	2,441
1972	411,885,893	205	999
1973	394,729,999	183	23,125
1974	360,594,065	87	24,453
1975	330,237,452	111	761
1976	316,920,109	70	5,023
1977	303,948,240	74	1,084
1978	292,265,042	70	1,525
1979	285,565,538	111	2,629
1980	277,388,975	59	2,833
1981	289,765,405	66	5,869
1982	321,211,457	75	1,140

1983	348,331,243	103	2,557
1984	370,239,014	62	414
1985	389,324,285	81	1,725
1986	389,216,004	51	584
1987	366,141,709	38	242
1988	320,667,424	34	15,973
1989	305,167,655	28	484
1990	324,423,181	39	19,408
1991	315,693,251	37	707
1992	353,726,380	31	2,336
1993	362,675,766	25	159
1994	369,474,307	27	4,808

Source: Federal Offshore Statistics: 1994 (in press)

location and timing of lease sales in the program. In addition to this *relative ranking* of program areas, the MMS performs a *valuation of program alternatives* analysis, which estimates net benefits of anticipated production from each of the five EIS alternatives. (The EIS alternatives consist of the program proposal and four comprehensive groupings of the various region and program area options.) The analysis was summarized in the Proposed Program decision document and, in general, has not changed significantly since then. Therefore, this section focuses on changes in, and implications of, the analysis. Readers who are unfamiliar with the analysis should refer to the previous decision document or to appendix 2, which contains a more detailed description of the methodology and results.

### ***Estimates of Hydrocarbon Resources.***

As stated in the decision documents for the Draft Proposed Program and the Proposed Program, the MMS has obtained its resource estimates for the Proposed Final Program analysis from the new methodology and more advanced models used in the National Assessment of 1996. The improved methodology has not produced results that would justify a reconsideration of earlier decisions based on the relative ranking of program area resources. Table 5 shows the new estimates of hydrocarbon resources in blocks anticipated to be available for leasing in the new program under the proposal and under those options that would change the estimates. (Options to exclude the Hope Basin and portions of the eastern Beaufort Sea do not affect estimates of available resources and are not represented in tables 5 and 6. See appendix 2 for discussion of these options.) The National Assessment estimates were developed with the Geologic Resource Assessment program (GRASP) and Petroleum Resources Appraisal Systems Software (PRASS) models, as explained in appendix 2. The new National Assessment also provided the *anticipated production* estimates used for the *valuation of program alternatives*. Results of the valuation of program alternatives are shown with the individual options in part III of this document and in tables 2-3 and 2-4 of appendix 2.

### ***Estimates of Total Net Benefits and Implications***

Figure 2 summarizes the quantitative components of the MMS net benefits analysis. Table 6 shows the estimated total net benefits of the resources anticipated to be available in each program area as of July 1997.

The Central and Western Gulf of Mexico have vast existing infrastructure and large amounts of available hydrocarbon resources that contribute to high aggregate net benefit values. Those areas have the most unleased, undiscovered, economically recoverable resources and the highest net social value. In addition the value of these areas has been proven over decades of OCS production. From an energy and economic perspective they should be offered most frequently in the new 5-year program.

While the net benefits to society from anticipated production in the four Alaska OCS program areas range from negligible to \$1.1 billion in the Base Case and from \$220 million to \$10 billion in the High Case, the net economic value (NEV) for all but the

Beaufort Sea is very low at the *most likely* (Base Case) price of \$18 per barrel of oil. In addition the high costs of infrastructure development and operations have contributed to the lack of commercial success in the Alaska OCS Region. The industry's future interest in any lease sales off Alaska will be strongly influenced by price expectations and the results of recent exploration. Given the small number of existing leases (all in the Beaufort Sea Planning Area) and other factors, such results might not be available in time to affect planning from one lease sale to the next if sufficient time is not deliberately provided between sales. Considering the nature of the resource estimates for the Alaska Region, it would be reasonable to schedule the Beaufort Sea and the Chukchi Sea areas for leasing at least once in the new 5-year program. Although they have lower NEV's, the Gulf of Alaska and Cook Inlet/Shelikof Strait also should be considered for leasing, absent special environmental or social concerns, if industry interest warrants.

**Table 5.** Estimated Economically Recoverable Hydrocarbon Resources Available as of July 1997

<b>Areas in the Program Proposal</b>	<b>Oil (BBO)</b>	<b>Gas (Tcf)</b>
Western Gulf of Mexico—map 10	1.47 1.83	19.46 24.56
Central Gulf of Mexico—map 10	1.69 2.29	24.17 31.81
Eastern Gulf of Mexico—map 11	0.04 0.08	0.66 1.04
Beaufort Sea—map 4	0.85 1.70	None
Chukchi Sea/Hope Basin—map 7	1.19 3.00	None
Cook Inlet/Shelikof Strait—map 8	0.12 0.27	0.18 0.40
Gulf of Alaska—map 9	0.05 0.12	None
<b>Alternative Areas</b>	<b>Oil (BBO)</b>	<b>Gas (Tcf)</b>
Eastern Gulf of Mexico—map 12	0.04 0.09	0.74 1.19
Eastern Gulf of Mexico—map 14	0.01 0.03	0.27 0.53
Eastern Gulf of Mexico—map 15	0.01 0.04	0.35 0.68

Mid-Atlantic—map 16	0.00	0.35
	0.01	0.54

Base Case estimates (\$18 per bbl and \$2.11 per Mcf) are shown first, with High Case estimates (\$30 per bbl and \$3.52 per Mcf) underneath.

The areas in the program proposal are described and considered under Option 1 in this decision document and Alternative 1 in the final EIS. The alternative areas are described and considered under the options cited in corresponding maps and under Alternatives 4 and 5 in the final EIS. See part III.A for maps and descriptions of the program options and EIS alternatives.

**Available Undiscovered, Economically Recoverable Resources\***

**x Assumed Price**

**= Gross Revenue**

**Gross Revenue**

**- Private Costs**

**= Net Economic Value (NEV)**

**NEV**

**- Environmental and Social Costs**

**= Net Social Value (Net Supply-Side Benefits)**

**Net Social Value**

**+ Consumer Surplus Benefits (Net Demand-Side Benefits)**

**= Net Microeconomic Benefits**

**Figure 2.** Components of the Net Benefits Analysis

\*The estimates for the relative ranking analysis are based on all resources anticipated to be available for leasing in each program area as of July 1997. The estimates for the valuation of program alternatives are based solely on anticipated production under each EIS alternative.

An area with a low or negligible estimated net economic value should not be removed automatically from consideration for leasing. Other factors, including industry interest, unpredicted changes in costs or resource prices, the ability of individually *uneconomic* discoveries to jointly support infrastructure development costs, and future technological innovation, also need to be examined.

Companies can have different assessments of the resource potential of various areas, especially frontier areas (where any additional exploration could add significantly to a limited base of information). When deciding whether to commit investment dollars to explore unproven areas, companies are going to consider the possibility that an area contains much greater resources than indicated by the mean estimate. For example, any companies interested in the Chukchi Sea/Hope Basin area are not looking at the risked NEV shown here but at the tremendous resource potential that could be tapped if

conditions are right, as implied by the conventionally recoverable resource estimates in table 2-1 in appendix 2. Also, while the MMS estimates the Cook Inlet/Shelikof Strait program area to have a low NEV, companies have expressed significant interest in the area, and the State of Alaska is planning lease sales for adjacent State lands and waters.

Similarly, if warranted by industry interest, other areas that the MMS estimates to have negligible NEV could be combined for leasing with contiguous areas of significant value. This would allow companies to pursue exploration strategies that assume the areas of higher resource potential might extend farther than the MMS estimates indicate, and it could result in valuable information concerning resource potential. Also, the infrastructure developed to support production and transportation of resources in one area could make

**Table 6.** Summary of Estimated Net Benefits of Producing Available Program Area Resources

<b>Areas in the Program Proposal</b>	<b>Net Economic Value</b>	<b>Environmental and Social Costs</b>	<b>Net Social Value</b>	<b>Consumer Surplus Benefits</b>	<b>Net Microeconomic Benefits</b>
Western Gulf of Mexico	\$12,800.0 \$28,040.0	(\$0.8) (\$1.3)	\$12,799.2 \$28,038.7	\$1,647.0 \$3,344.0	\$14,446.2 \$31,382.7
Central Gulf of Mexico	\$14,590.0 \$33,850.0	(\$38.3) (\$62.2)	\$14,551.7 \$33,787.8	\$1,961.0 \$4,246.0	\$16,512.7 \$38,033.8
Eastern Gulf of Mexico	\$230.0 \$760.0	(\$5.5) (\$11.1)	\$224.5 \$748.9	\$28.0 \$81.0	\$252.5 \$829.9
Beaufort Sea	\$2,880.0 \$15,880.0	(\$28.9) (\$38.7)	\$2,851.1 \$15,841.3	\$1,582.0 \$3,781.0	\$4,433.1 \$19,622.3
Chukchi Sea/Hope Basin	\$750.0 \$10,060.0	(\$16.4) (\$40.8)	\$733.6 \$10,019.2	\$648.0 \$2,700.0	\$1,381.6 \$12,719.2
Cook Inlet/ Shelikof Strait	\$520.0 \$2,500.0	(\$1.2) (\$3.0)	\$518.8 \$2,497.0	\$165.0 \$472.0	\$683.8 \$2,969.0
Gulf of Alaska	* \$570.0	* (\$20.1)	* \$549.9	* \$160.0	* \$709.9
<b>Alternative Areas</b>					
Eastern Gulf of Mexico—map 12	\$250.0 \$900.0	(\$5.5) (\$13.1)	\$244.5 \$886.9	\$30.0 \$92.0	\$274.5 \$978.9
Eastern Gulf of Mexico—map 14	\$20.0 \$280.0	\$2.6 \$4.1	\$17.4 \$275.9	\$10.0 \$37.0	\$27.4 \$312.9
Eastern Gulf of Mexico—map 15	\$40.0 \$420.0	\$2.6 \$6.1	\$37.4 \$413.9	\$12.0 \$48.0	\$49.4 \$461.9
Mid-Atlantic—map 16	* *	* *	* *	* *	* *

All figures in the table are in millions of 1997 dollars. Base Case estimates (\$18 per bbl and \$2.11 per Mcf) are shown first, with High Case estimates (\$30 per bbl and \$3.52 per Mcf) underneath.

The areas in the program proposal are described and considered under Option 1 in this decision document and Alternative 1 in the final EIS. The alternative areas are described and considered under the options cited in corresponding maps and under Alternatives 4 and 5 in the EIS. See part III.A for maps and descriptions of the program options and EIS alternatives.

\*Net economic value is considered negligible. Assuming no exploration or other activity, social costs would not be incurred, and there would be no net social value or consumer surplus benefits.



profitable the development of *uneconomic* discoveries in nearby areas. This is part of the rationale for including a portion of the Hope Basin in a joint sale with the higher value Chukchi Sea area, as well as for the inclusion of the area east of Barter Island in the Beaufort Sea, even though it is assumed to have only subeconomic resources. A joint lease sale for the Chukchi Sea and Hope Basin was considered in the 5-year program for 1992-1997 and subsequently, for a possible simultaneous U.S./Russian Federation lease sale in the Chukchi Sea.

Although geologic and economic factors might suggest scheduling sales in other planning areas located in the Pacific and Atlantic OCS regions, experience indicates that additional considerations must be assessed, such as the level of industry interest and noneconomic factors. Due to executive and congressional restrictions, local concerns, and continuing MMS discussion with local interested parties, it might not be appropriate to consider a number of areas (or portions of them) for leasing in the 5-year program for 1997-2002. Other factors—such as State and local concerns and the potential losses in resource economic values due to extensive delays and uncertainties in obtaining Federal, State, and local government approval for exploration, development, production, and transportation activities that could result—must be considered in addition to information concerning the amounts and values of prospective hydrocarbon resources. Delays and uncertainties have been found to dramatically increase the economic risk to lessees, thereby reducing the potential value of leases in areas that are subject to such conditions, making many of them unattractive to industry even though the underlying economic potential is significant.

If a leasing schedule is based on low resource price assumptions and pessimistic exploration expectations, the resulting schedule may preclude important discoveries in high-risk areas and may prove to be too restrictive if resource prices rise or other conditions change. Thus, there is a strong rationale for using expected or even optimistic economic and geologic assumptions in formulating a 5-year leasing schedule.

## **Environmental Sensitivity and Marine Productivity**

### ***Background***

Section 18(a)(2)(G) requires that the environmental sensitivity and marine productivity of the different OCS areas be considered. The analysis of this factor for the Proposed Final Program follows the approach taken for previous 5-year programs. This analysis incorporates by reference the analysis done for the 5-year program for 1992-1997, the methodology and results of which were presented in appendix 11 of the April 1992 SID. Marine productivity is the amount of plant or animal biomass produced in an area over a 1-year period. Estimating primary production (creation of plant material through photosynthesis) is considered to be the only valid approach to conducting a meaningful comparison of marine productivity among all OCS planning areas. While secondary productivity factors relating to endangered or valued species (e.g., coral communities), unique socioeconomic factors (e.g., subsistence hunting), and commercial fisheries are important considerations in the formulation of a leasing program, such factors are not included in this analysis of environmental sensitivity/marine productivity. This is because despite the considerable historical information available for OCS waters, the nature and

distribution of the data limit the ability to directly compare geographic regions of the OCS and derive relative values for all planning areas.

Although it might be desirable to include in this analysis a thorough consideration of higher level productivity as requested by the NOAA—which recommended that the analysis include landing and dollar values for commercial fisheries in the Central and Western Gulf of Mexico Planning Areas—and other commenters, the best available data on marine productivity are not consistent across OCS planning areas and in many cases are inadequate for such comparisons. Thus, secondary productivity factors receive thorough consideration and analysis in the context of other section 18 criteria, in the programmatic EIS, and later on in sale-specific EIS's. See chapter III of the final EIS for region-by-region discussions relating to higher level productivity.

Relative environmental sensitivity is calculated as a measure of the sensitivity of various coastal and marine habitats and biota to spilled crude oil. Unlike some assessments in the programmatic and sale-specific EIS's designed to estimate potential risks from proposed oil and gas leasing activities, these analyses do not consider risk, nor do the rankings for environmental sensitivity reflect potential risk. Analysis of the effects of oil and gas activities on higher level species is left to programmatic, sale-specific, and site-specific reviews conducted pursuant to NEPA. The programmatic final EIS accompanying this Proposed Final Program decision document describes the biological environments of the OCS regions in chapter III and discusses the potential environmental consequences of OCS program activities in chapter IV.

### ***Productivity and Sensitivity Estimates***

This Proposed Final Program decision document focuses on 9 of the total of 26 OCS planning areas. These 9 planning areas are being analyzed further. Table 7 estimates the total primary production for those areas, and table 8 lists annual averages per hectare. The numbers provide a scale to help determine if local areas of interest exhibit exceptional productivity relative to the average rate for the entire area.

The MMS also has reviewed new information on productivity and effects of crude oil available since 1990. New data from recent oil spills have confirmed relative sensitivities of biota and habitats as used in the sensitivity analysis (Davis et al., 1995; Exxon Valdez Oil Spill Trustee Council, 1993; Gerges, 1993; Khordagui and Al-Ajmi, 1993; Maki, 1991). However, delays in launching a satellite have resulted in no new satellite data for ocean color (primary production estimates) being available from 1990 to the present.

The concept of defining overall environmental sensitivity of different geographic regions is even more complex than that of comparatively analyzing overall marine productivity. For environmental sensitivity, defining what in the environment is of concern and then further determining a measure of sensitivity to numerous potential impacts result in an extremely complex analysis. To establish some type of comparative index, the MMS analysis has focused on potentially the most catastrophic phenomenon from offshore oil and gas development, spilled crude oil. Scientific studies have provided much information to establish a good sense of relative sensitivity of habitats and broad groups of marine biota to spilled crude oil.

As in the April 1992 SID, the results of the environmental sensitivity analysis are presented as the distributions and relative environmental sensitivities of three components of each OCS planning area: (1) coastal habitat; (2) marine habitat; and (3) marine biota. Because relatively small differences in total scores are not meaningful, planning areas have been placed in three groups with Group 1 representing those planning areas that have the highest relative sensitivity and Group 3 representing those planning areas with the least relative sensitivity. The final environmental sensitivity calculations for each major component are used to designate under which of three relative categories of sensitivity (1, 2, or 3) each of the planning areas is ranked for that specific component. Table 9 contains the final groupings by each individual component for the nine planning areas under analysis. The planning areas for each of the component categories have been placed in a division that indicates their relative standing: Group 1—greatest relative sensitivity; Group 2—moderate relative sensitivity; and Group 3—lowest relative sensitivity. In the marine habitat and coastal habitat components there is also a fourth group—not ranked—for those planning areas that lack coastal habitat or have mostly unknown marine habitats.

As in the 1992 analysis of environmental sensitivity and marine productivity, the current analysis examines whole OCS planning areas, not the more defined program areas that have been identified for leasing consideration, because the MMS does not have the capability to generate new estimates for those smaller program areas. There is virtually no difference between the Central and Western Gulf of Mexico Planning Areas and the program areas identified for each. The Mid-Atlantic, Eastern Gulf, and all five Alaska program areas are much smaller portions of their respective planning areas. Although the selection of different portions of planning areas would have an overall effect on the potential risks that may result from proposed OCS oil and gas activities in each of those areas, there would be no change to the overall sensitivity and productivity of the planning areas to OCS activities. This is because the areas excluded from the planning areas will still be at risk to the activities in the included (program) areas, and because marine productivity is an expression of the amount of biomass produced per unit area regardless of the overall size of the area analyzed.

**Table 7.** Total Primary Productivity Estimates (Millions of metric tons of carbon per year)

Planning Area	Productivity
<b>Group 1</b>	
none being considered	
<b>Group 2</b>	
Mid-Atlantic	140
Eastern Gulf of Mexico	117
Central Gulf of Mexico	110
Gulf of Alaska	106
<b>Group 3</b>	

Hope Basin	39
Western Gulf of Mexico	31
Cook Inlet/Shelikof Strait	24
Chukchi Sea	8
Beaufort Sea	5

**Table 8.** Average Primary Productivity Estimates (Metric tons of carbon per hectare per year)

Planning Area	Productivity
<b>Group 1</b>	
Cook Inlet/Shelikof Strait	7
Hope Basin	7
<b>Group 2</b>	
Central Gulf of Mexico	6
Mid-Atlantic	4
Eastern Gulf of Mexico	4
Western Gulf of Mexico	2
Gulf of Alaska	2
<b>Group 3</b>	
Chukchi Sea	1
Beaufort Sea	*

\*Less than 0.5

## Equitable Sharing of Developmental Benefits and Environmental Risks

Section 18(a)(2)(B) requires that the Secretary consider an equitable sharing of developmental benefits and environmental risks. Because developmental benefits and many environmental risks tend to accrue outside the OCS regions, which are portions of land lying under the ocean, analysis of this factor usually goes beyond the strict requirements of the OCS Lands Act and considers the sharing of benefits and risks to people within onshore regions near the OCS.

Section 18 does not require that the leasing program achieve an equitable sharing of developmental benefits and environmental risks, nor have the courts set a specific standard of equitable sharing that the Secretary is to achieve. As the court recognized in *California I* and *California II*, the degree to which a proposed 5-year schedule of lease sales might achieve an equitable sharing of benefits and risks must be considered in light

of a number of other factors, many of which are not under the control of the Department of the Interior and some of which greatly affect the options available.

The important issues to consider, as well as the anticipated distribution of benefits and risks implied by the various options, have not changed significantly since the analysis for the Proposed Program was completed. The decision document for the Proposed Program should be consulted for more detail on any of the topics in this section.

**Table 9.** Relative Environmental Sensitivity (Groups show relative environmental sensitivity in descending order)

Coastal Habitats	Marine Habitats	Marine Biota
<b>Group 1</b>		
Central Gulf of Mexico	Cook Inlet	Central Gulf of Mexico
Gulf of Alaska		Western Gulf of Mexico
Western Gulf of Mexico		Mid-Atlantic
<b>Group 2</b>		
Eastern Gulf of Mexico	Gulf of Alaska	Gulf of Alaska
Cook Inlet/Shelikof Strait	Eastern Gulf of Mexico	Cook Inlet
	Beaufort Sea	Eastern Gulf of Mexico
	Western Gulf of Mexico	Beaufort Sea
	Central Gulf of Mexico	
<b>Group 3</b>		
Chukchi Sea	Mid-Atlantic	Hope Basin
Hope Basin		Chukchi Sea
Mid-Atlantic		
Beaufort Sea		
<b>Not Ranked</b>		
	Chukchi Sea	
	Hope Basin	

### ***Comments***

The Governor of Alabama, the Alabama Department of Conservation and Natural Resources, and the West Florida Regional Planning Council expressed support for a sharing of the financial benefits of OCS development and production with coastal States and communities affected by those activities. Dauphin Island Sea Lab stated its hope that Alabama would receive the impact revenues for any resources produced off Florida but

transported to and processed in Alabama, given its expectation that related onshore development would cause more impacts than would the offshore activities themselves. CalResources also advocated the sharing of Federal royalty revenues with State, county, and municipal governments affected by OCS activities. The Bering Straits Coastal Management Program requested creation of a fund to compensate or replace food resources lost to subsistence users without having to go to court to prove damages. The Connecticut Department of Environmental Protection supported the sharing of OCS revenues with affected States and proposed that the MMS use existing authority to evaluate revenue sharing opportunities, using proposed bill S.575 and communication with States and local governments as guides in determining how best to structure the sharing. In the past Connecticut has asked that planning and evaluation costs be included among the impacts considered in any revenue sharing proposal. Other respondents, including some in industry, have implied continued support for impact assistance and revenue sharing as expressed in the previous comments. In addition at a public meeting held in Alaska following issuance of the Proposed Program and draft EIS, the Mayor of Kaktovik and the Arctic Slope Native Association commented in favor of impact assistance for communities affected by offshore development.

### ***Analysis of Regional Distribution of Developmental Benefits and Environmental Risks***

Some benefits and risks to onshore residents and the State and local governments that represent them are distributed widely, while others tend to be concentrated in the areas near OCS activities. The expected effects of oil and gas activities—both benefits and costs—will depend on a number of factors, including local, national, and international economic conditions, the extent to which a local support industry exists, the level of OCS activities already taking place, and the nature of the proposal.

**Benefits that Tend to Be Concentrated in the Regions of Greatest Risk.** The benefits of OCS oil and gas activities that accrue primarily to oil and gas producing regions and nearby onshore areas are derived from reduced risk of tanker spills and from the direct, indirect, and induced effects of industry spending. (These benefits are summarized on pages 99-102 of the Proposed Program decision document.) Although it primarily addresses potential negative effects of the program proposal and alternatives, the programmatic final EIS also contains further information on likely employment benefits.

Because almost any combination of program options under consideration for the 5-year program for 1997-2002 would result in a majority of sales being scheduled for the Gulf of Mexico, States in that region are expected to gain the largest share of employment benefits associated with the program. As noted in the previous analysis, the potential for changes appears to be greatest in Alaska, which has an established onshore oil industry but where activity on the OCS has been limited to exploration efforts. Because there are no Atlantic OCS sales on the proposed schedule, no employment and income effects are expected to result in the Atlantic region, although a limited lease sale in the Mid-Atlantic as analyzed under Alternative 5 of the programmatic EIS could result in small benefits to coastal residents associated with exploration, development, and eventual production.

As shown in the analysis of energy needs in part IV.A of this document, oil and gas produced from the OCS result in lower levels of imported oil and reductions in use of energy from other sources. This lowers the risk of oil spill damage from supertankers bringing oil to the United States, and the risk is lowered for areas with and without nearby OCS production.

Federal, State, and local policies provide various means for distributing OCS-related benefits. Although benefits flowing from Federal Government revenues obtained through OCS oil and gas activity are distributed widely among the States, they also accrue to onshore populations near that OCS activity. Since passage of the OCS Lands Act Amendments of 1985 (P.L. 99-272), over \$2.3 billion in revenues has been distributed to seven coastal States having Federal oil and gas leases adjacent to State waters as defined in section 8(g) of the Act (Louisiana, Texas, Alabama, Mississippi, Florida, California, and Alaska). In addition States and localities capture some of the developmental benefits through taxes and user fees.

**Benefits that Tend to Be Widely Distributed.** Previous 5-year program analyses of equitable sharing have shown that some of the benefits of the OCS program (Federal revenues from lessees' cash bonus payments, rentals, royalties, income taxes, and other sources) are widely distributed through the Federal tax system. This conclusion held whether the sharing was considered to be through reduction in Federal tax payments, through Federal funds provided to State and local governments, or through Federal programs benefiting the general public. In addition hundreds of millions of dollars in OCS revenues are transferred annually to the Land and Water Conservation Fund, which is used to buy park and recreation land and to assist States in parks and recreation planning and acquisition, and to the National Historic Preservation Fund for use by State and local governments in preserving historic properties. The OCS program also generates national benefits in forms other than Federal revenues. One form is corporate profits and benefits, which tend to be distributed to shareholders and employees on a national basis, similar to the sharing of Federal revenues. Despite the concentration of most factor-of-production spending in areas nearest OCS operations, millions of contract dollars also are spent in other States.

**Risks that Tend to Be Concentrated in the Regions of Production.** Exploration, development, production, and transportation activities do not occur without some risk to the physical, biological, and socioeconomic environment. Environmental costs are incurred in and near the areas in which oil and gas are produced, as well as along the routes from production sites to refineries. Socioeconomic costs are incurred in populated coastal areas near production and transportation of hydrocarbon resources. In addition the onshore populations in areas with local economies heavily dependent on OCS oil and gas activities are vulnerable to problems associated with sharp changes in resource prices.

A thorough description of potential environmental risks posed by each of the five basic alternative program schedules is presented in the programmatic final EIS, and summaries are provided in the discussions of program options for OCS regions in part III of this decision document. As explained in appendix 2, those environmental risks described in the programmatic EIS that can be reasonably quantified are included in the environmental and social cost estimates.

The environmental and social cost calculations in the social benefits analysis allocate costs to the area where production of the resource is assumed to occur (see table 10). The MMS has reallocated the environmental and social cost data to reflect *regional costs*, which are obtained by allocating oil-spill costs to the planning areas in which (or nearest which) they are expected to occur, then subtracting those costs that would otherwise be incurred because of additional oil imports. Regional cost calculations attribute costs to the *expected* site of an oil spill and do not account for the fact that the financial costs, including cleanup and compensation for injury to resources and property, would be borne more widely by company stockholders and (perhaps) employees, whether or not a responsible party can be determined.

If an increase in OCS oil and gas activities causes a large change in the local economy, it brings some risk as well. These risks are primarily of two kinds, the strain on local infrastructure and the local socioeconomic fabric and the increased vulnerability of the local economy to sudden, sharp changes in oil and gas prices. These risks are greatest in Alaska, which has no OCS-related infrastructure (in contrast with the Gulf of Mexico Region) and where commercial discoveries could lead to a proportionately large influx of new residents (unlike the Mid-Atlantic area). However, OCS production off Alaska could help to alleviate some social problems caused by unemployment and underemployment in Alaska, provide additional time and money to develop a more diversified State economy, and (for Beaufort Sea production) preserve jobs by extending the life of the Trans Alaska Pipeline.

**Widely Distributed Compensation Costs for Risks Borne Regionally.** When innocent parties or natural resources are injured by an event that can be attributed to a financially responsible party, the responsible party must provide full compensation for the injury. If the responsible party is a corporation with stockholders (and employees) residing in other parts of the country, presumably the costs also would be distributed widely rather than borne locally. Portions of revenue generated by the oil and gas industry are dispensed to special funds established by law to provide compensation for losses in OCS-related cases where responsibility cannot be assigned. The Oil Spill Liability Trust Fund, the Hazardous Substance Response Trust Fund, and the Fishermen's Contingency Fund all can be used to compensate for losses resulting from OCS oil and gas activities. To the extent compensation is paid from these funds, the relevant costs are distributed widely because the owners and stockholders of the companies that contribute to these funds are widely scattered among the States.

### ***Summary***

The lease sales scheduled in the Proposed Program and the other options for lease sales explicitly considered in the Proposed Final Program (see part III above and Alternatives 3, 4, and 5 in the EIS) are unlikely to cause or contribute to major socioeconomic problems, such as those associated with a large and sudden influx of new residents, in or near three of the four OCS regions. Major commercial discoveries on the Alaska OCS could lead to important changes in employment and population patterns, but the concentration of new residents in regional enclaves would mitigate some effects of these changes. Any production in the Beaufort Sea or the Chukchi Sea/Hope Basin program areas would introduce the risk of oil spills that could harm natural resources—including



marine mammals and other wildlife—in and near the arctic planning areas. Cook Inlet and the Gulf of Alaska also could face increased risk of spills, depending on whether new tanker traffic from Beaufort Sea and Chukchi Sea/Hope Basin production and any local production would increase or merely offset declines in the existing risks related to production and tankering oil.

The natural distribution of oil and gas resources, strong opposition to leasing from onshore residents near some planning areas, and the need to achieve other goals indicate that the Secretary might best interpret *equitable sharing* in the context of the history of OCS activity and the high degree of uncertainty inherent in the long-term implementation of any 5-year schedule. Historically, lease sales have been held in all four OCS regions, and efforts continue to work with nearby onshore communities "to balance orderly energy resource development with protection of the human, marine, and coastal environments" in the four regions. This cooperation has helped to double production from the Southern California Planning Area and might lead to eventual production from promising natural gas fields in the Eastern Gulf of Mexico. The Secretary should also bear in mind that although there are prospective portions of all four OCS regions, considering the overall history of the program—especially the legislative constraints that have affected implementation of previous 5-year programs—a more aggressive schedule would not necessarily result in more lease sales or more production than would a more restrained schedule. Focusing on being a good neighbor, proceeding deliberately with environmental concerns extensively studied and analyzed, and pursuing consensus building efforts could result in a 5-year schedule under which most lease sales are held on time and future OCS production is maximized.

**Table 10.** Regional Environmental and Social Costs for the Program Proposal and EIS Alternatives

Planning Areas	Gross OCS Costs	Avoided Costs of Oil Imports	Net OCS Costs
<b>Alternative 1</b>			
Western Gulf of Mexico	\$1.2 \$2.7	\$0.6 \$1.3	\$0.6 \$1.4
Central Gulf of Mexico	\$21.6 \$46.8	\$4.1 \$10.6	\$17.5 \$36.2
Eastern Gulf of Mexico	\$4.9 \$8.0	\$0.7 \$0.1	\$4.2 \$7.9
Beaufort Sea	\$2.3 \$9.1	\$0.0 \$0.0	\$2.3 \$9.1
Chukchi Sea/Hope Basin	\$1.3 \$10.8	\$0.0 \$0.0	\$1.3 \$10.8
Cook Inlet	\$0.4 \$2.4	\$0.3 \$1.8	\$0.1 \$0.6
Gulf of Alaska	\$0.0 \$5.0	\$0.0 \$0.0	\$0.0 \$5.0

Washington/Oregon	\$0.5	\$0.44	\$0.1
	\$2.5	\$2.2	\$0.3
Central California	\$0.8	\$0.7	\$0.1
	\$4.2	\$3.7	\$0.5
Southern California	\$0.7	\$0.62	\$0.1
	\$3.6	\$3.2	\$0.4

**Table 10.** Regional Environmental and Social Costs for the Program Proposal and EIS Alternatives  
(continued)

<b>Alternative 3</b>			
Western Gulf of Mexico	\$0.8 \$1.7	\$0.4 \$0.8	\$0.4 \$0.9
Central Gulf of Mexico	\$13.2 \$27.0	\$2.9 \$6.8	\$10.3 \$20.2
Beaufort Sea	\$1.5 \$5.4	\$0.0 \$0.0	\$1.5 \$5.4
Cook Inlet	\$0.4 \$2.3	\$0.3 \$1.8	\$0.1 \$0.5
Gulf of Alaska	\$0.0 \$5.0	\$0.0 \$0.0	\$0.0 \$5.0
Washington/Oregon	\$0.4 \$2.1	\$0.3 \$1.9	\$0.1 \$0.2
Central California	\$0.6 \$3.5	\$0.5 \$3.1	\$0.1 \$0.4
Southern California	\$0.5 \$3.0	\$0.4 \$2.6	\$0.1 \$0.4
<b>Alternative 4B</b>			
Eastern Gulf of Mexico	\$3.0 \$5.0	\$0.4 \$1.1	\$2.6 \$3.9
<b>Alternative 5A</b>			
Central Gulf of Mexico	\$21.6 \$46.8	\$4.1 \$10.6	\$17.5 \$36.2
Eastern Gulf of Mexico (1 sale)	\$5.8 \$8.1	\$0.6 \$1.3	\$5.2 \$6.8
Mid-Atlantic (5A&5B)	\$0.0 \$0.0	\$0.0 \$0.0	\$0.0 \$0.0
<b>Alternative 5B</b>			
Central Gulf of Mexico	\$21.6 \$46.8	\$4.1 \$11.1	\$17.5 \$35.7
Eastern Gulf of Mexico (2 sales)	\$7.1 \$9.6	\$0.7 \$1.5	\$6.4 \$8.1

All figures in the table are in millions of 1997 dollars. Top figure in each box is the Base Case estimate, with the High Case estimate shown below. All regional and social costs are computed relative to Alternative 2 (No Action), so it would show no regional costs and is not included in the table. In Alternative 4B, the program area would begin 15 miles from shore. Alternative 5A includes one sale in the Eastern Gulf of Mexico; 5B includes an additional sale for deep-water blocks only.

In some areas where there has been opposition to past leasing programs, there is now a potential for building consensus on more limited and carefully designed leasing proposals. Efforts to build trust and develop a common base of understanding and knowledge need to proceed deliberately and carefully and are likely to take time. Scheduling sales in planning areas adjacent to States and counties that recently have begun to modify their long-standing opposition to leasing (but that do not yet fully and unconditionally support the leasing proposals that have been under consideration) could be viewed by those jurisdictions as premature and unilateral decisions on the part of the MMS, reminiscent of past actions that raised their suspicion and opposition. Such actions by the MMS would be expected to damage what mutual trust recently has been established and could result in continued support for Congressional leasing moratoria in the affected areas and could even slow or prevent exploration and development on existing leases. Thus, the prospects for a broad distribution of developmental benefits from future OCS leasing and production in some areas over the longer run (i.e., the approximately 40-year period that would be affected by the new program as analyzed in the EIS) actually might be greater if some areas are deferred from new leasing in the shorter term by not including them in the 5-year leasing schedule for 1997-2002.

A 5-year schedule defined by the options for leasing under consideration for the Proposed Final Program could be viewed as providing for an equitable sharing of developmental benefits and environmental risks, because those regions and onshore areas facing the most risk also receive the greatest benefits. The Proposed Final Program options reflect a focus on building consensus and considering the laws, goals, and policies of affected States, which will enable the Secretary to develop a program with the least controversy while still meeting the energy concerns expressed by section 18, thereby resulting in the best equitable sharing currently practical. In addition there are measures independent of the 5-year program decision that can be taken to reduce risk to the areas included in the schedule: many leases now include stipulations to avoid some anticipated environmental risks and Congress can enact legislation to provide for some form of coastal impact assistance if it believes that States and localities need further compensation for risks imposed by nearby OCS activity.

### **Other Uses of the OCS**

Section 18(a)(2)(C) requires the Secretary to examine the location of areas considered for leasing with respect to other uses of the resources and space within those areas. Other uses of the OCS that could affect or be affected by oil and gas leasing and ensuing activities are described below. The following types of uses are addressed:

- ! Subsistence (hunting and fishing activities by Alaska Natives);
- ! Commercial Fishing;
- ! Tourism and Recreation;
- ! Vessel Traffic;
- ! Areas of Special Concern (onshore and offshore areas designated for special uses and protections, such as parks and sanctuaries);

! Military and NASA (operating areas in the Gulf of Mexico and Atlantic Regions); and

! Nonenergy Marine Minerals.

The information presented below summarizes the detailed regional descriptions of the environment that are included in chapter III of the programmatic final EIS.

### ***Alaska Region***

**Subsistence.** As defined by the Alaska National Interest Lands Conservation Act, subsistence uses are "the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption . . ."

Subsistence activities in the Beaufort Sea marine and coastal area involve the bowhead whale as well as other species including caribou, freshwater and ocean fish, ducks and geese, bearded seals, and Dall sheep. Species subject to subsistence activities in the Chukchi Sea area include bowhead whale, beluga whale, caribou, seal, walrus, polar bear, fish, duck, and goose. Bowhead whaling is the single most valued activity in the North Slope subsistence economy today. In the vicinity of the Hope Basin area subsistence activities are oriented toward sea mammals, including the bowhead whale, and other subsistence resources include caribou, migratory birds, eggs, berries, and other vegetation. Widely varying subsistence patterns in the vicinity of Cook Inlet reflect the area's diverse population. Generally, the inhabitants of small traditional villages harvest saltwater and freshwater fish and small sea mammals in the summer and fall, moose in the fall, and invertebrates and some sea mammals year round. In the larger, industrial communities, the people generally fish in the summer and hunt in the fall, and more households do not partake in subsistence activities. The pattern of activity in the Gulf of Alaska area primarily involves saltwater and freshwater fishing, sea mammal hunting (but not whaling), and upland game hunting.

**Commercial Fishing.** In the Beaufort Sea area there is one family operating a commercial fishery focused primarily on cisco and whitefish in the Colville River Delta during summer and fall. Except for a small chum salmon fishery in Kotzebue Sound, there are currently no commercial fisheries in the vicinity of the Chukchi Sea/Hope Basin program area. Commercial fishing is an important segment of the local economy of the Cook Inlet region, focusing mainly on salmon and to a lesser degree on crab, shrimp, and halibut. In the vicinity of the Gulf of Alaska area being considered for OCS leasing the city of Yakutat depends heavily on fishing and fish processing, with operations concentrating mainly on salmon and also on halibut and crab.

**Tourism and Recreation.** In the Beaufort Sea and Chukchi Sea/Hope Basin areas, most recreation activities take place in the summer and include fishing, boating, hunting, hiking, sightseeing, camping, and picnicking. Organized tours are conducted in the Beaufort Sea area, but few outside visitors travel to the Chukchi Sea/Hope Basin areas. The Cook Inlet and Gulf of Alaska areas offer abundant high quality tourist and recreation resources that attract numerous State, national, and international visitors. Additional information relating to tourism and recreation in Alaska is available in the final EIS description of areas of special concern.

**Vessel Traffic.** Marine traffic in the arctic waters of Beaufort Sea and Chukchi Sea/Hope Basin is limited to a 60-90-day open-water season. There are no major arctic ports and the most extensive marine facilities are those associated with the Prudhoe Bay industrial complex. In southern Alaska tour ships, barges, and ferries travel inland and among the islands, and freighters bound for Asia stay farther offshore through the Gulf of Alaska. Oil tankers travel between the west coast of the continental United States and the Alyeska terminal at Valdez through Prince William Sound in separate traffic lanes prescribed by the U.S. Coast Guard and through the Gulf of Alaska. Approximately 1,000 such trips from the Alyeska oil terminal in Valdez are made per year. Tankers carrying oil from Valdez into the Cook Inlet region for processing take another route through Prince William Sound that does not include the prescribed Coast Guard lanes. Also, tankers that export oil from Valdez to Asia are not expected to travel within those lanes.

**Areas of Special Concern.** All four of the program areas off Alaska are adjacent to coastal portions of National Park System units. The Beaufort Sea area is adjacent to the Arctic National Wildlife Refuge. The Hope Basin portion of the Chukchi Sea/Hope Basin program area is located off Cape Krusenstern National Monument. The Cook Inlet area is near Lake Clark National Park and Preserve and the Katmai National Park and Preserve. The Gulf of Alaska area is adjacent to Chugach National Forest, Tongass National Forest, and Glacier Bay National Park and Preserve. All of these units are described in the final EIS.

**Nonenergy Marine Minerals.** There is no current development of offshore nonenergy minerals in any of the Alaska program areas under consideration for leasing. There are sand and gravel deposits in the Beaufort Sea, but their value as a construction material is not well known.

### ***Gulf of Mexico Region***

**Commercial Fishing.** The commercial fishing industry is one of the most important in the United States in both tonnage and value. Menhaden is the most important finfish harvested, followed by nine other species of significant value. Shrimp is the most important shellfish, along with various oyster, lobster, and crab species. Louisiana ranked first among Gulf States in total commercial fisheries landed in 1993, followed in descending order by Texas, Florida (west coast), Alabama, and Mississippi.

The commercial fishing industry in the Gulf has grown markedly over the last decade, especially in Louisiana. One factor contributing to this growth has been a decline in economic activities and employment associated with the oil and gas sector.

**Tourism and Recreation.** The northern Gulf of Mexico coastal zone is one of the major recreational regions of the United States, particularly in connection with marine fishing and beach-related activities. The shorefronts along the Gulf States offer a diversity of natural and developed landscapes and seascapes. The coastal beaches, barrier islands, estuarine bays and sounds, river deltas, and tidal marshes are extensively and intensively used for recreational activity by residents of the Gulf States and tourists from throughout the Nation, as well as from foreign countries. Publicly owned and administered areas,

such as national seashores, parks, beaches, and wildlife lands, as well as specially designated preservation areas, such as historic and natural sites and landmarks, wilderness areas, wildlife sanctuaries, and scenic rivers, attract residents and visitors throughout the year. Commercial and private recreational facilities and establishments, such as resorts, marinas, amusement parks, and ornamental gardens, also serve as primary interest areas and support services for people who seek enjoyment from the recreational resources associated with the Gulf of Mexico.

Tourism is a prominent industry in all of the Gulf of Mexico States—especially in Texas, where it is second only to the oil and chemical industry. Coastal resources such as beaches, marine resources such as sport fisheries, and developed coastal tourism infrastructure contribute significantly to Gulf State tourism economy. Oil and gas structures located off Louisiana and Texas in areas accessible to recreational divers and fishermen have been a significant attraction and have had a positive influence on the related economy.

Additional information relating to tourism and recreation in the Gulf of Mexico is available in the programmatic final EIS description of areas of special concern.

**Vessel Traffic.** An extensive shipping pattern has developed among the major Gulf of Mexico ports and between the ports and destinations outside the northern Gulf via the Straits of Florida, the Yucatan Channel, and the Bay of Campeche. In 1993 there were over 550,000 vessel trips measured along waterways associated with the major ports located in Texas, Louisiana, Mississippi, Alabama, and Florida (see chapter III of the programmatic final EIS for a list of the major port cities). The Ports of New Orleans and Houston are two of the largest ports serving the United States. Marine traffic in and along the Gulf of Mexico has fluctuated from year to year but, with the exception of activity related to petroleum, has not increased significantly since 1980. The U.S. Coast Guard has designated vessel fairways throughout the Gulf, including lanes running parallel to the shore that are located relatively close to Texas, Mississippi, and Alabama and farther off Louisiana.

There is also a substantial amount of domestic waterborne commerce along the Gulf coast that does not always use open Gulf waters. Vessels engaged in this activity generally use the Gulf Intracoastal Waterway, which follows the coastline inshore and through bays and estuaries and in some cases may move offshore. The Gulf Intracoastal Waterway reaches from Fort Myers, Florida, to Brownsville, Texas.

The most significant contribution of marine transportation to vessel traffic in the Gulf is from the tankering of imported crude oil. Extensive refinery capacity, easy port access, and a well-developed onshore-transportation system have contributed to the development of the Gulf coast region as an important center for handling imported oil and production from other domestic sources such as Alaska and California. Recently, the U.S. Coast Guard proposed the designation of three to four lightering areas in the Gulf to replace the nine existing rendezvous points in the Gulf (see January 5, 1995, *Federal Register*, pp. 1958-1971 for area coordinates). The Gulf Region also includes the Nation's Strategic Petroleum Reserve and the only deep-water crude oil terminal in the country, the Louisiana Offshore Oil Port (LOOP).

The Gulf of Mexico receives about 65 percent of all crude oil imported into this country. The great majority of the tankered oil enters the Gulf through the Yucatan Channel, and less used routes include the Straits of Florida and the Bay of Campeche. Large amounts of petroleum products also are imported and exported through the Gulf, and large volumes of both crude oil and petroleum products are transported along the Gulf coast by tanker and barge between land-based terminals and storage facilities at ports.

**Areas of Special Concern.** Special areas in the Gulf of Mexico include a National Marine Sanctuary, National Park System units, National Wildlife Refuges, a National Estuarine Research Reserve, and National Estuary Program areas. The Flower Garden Banks National Marine Sanctuary covers an approximately 45-square mile area located 177 miles offshore within the Western Gulf of Mexico Planning Area. National Park System units along the Gulf coast that are adjacent to areas considered for leasing include the Padre Island National Seashore off Texas and the Gulf Islands National Seashore off Mississippi and Alabama. There are 28 National Wildlife Refuges located along the coast from Texas to Alabama. The Weeks Bay National Estuarine Research Reserve encompasses a small estuary in the vicinity of Mobile Bay adjacent to the Central Gulf of Mexico Planning Area. National Estuary Program areas include the Galveston Bay and Corpus Christi Bay systems in Texas and the Barataria-Terrebonne Estuarine Complex and Lake Pontchartrain Basin Program in Louisiana. All of these areas are described in the programmatic final EIS.

**Military.** The Gulf of Mexico is the most important overwater testing and training area in the United States, with areas designated for air to surface and air to missile testing, surface vessel testing, and training for air, surface, mine, and submarine operations. Areas used by the military include the Corpus Christi Operating Area off Texas (mine warfare and aircraft carrier landing training), the New Orleans Operating Area off Louisiana (naval live firing maneuvers), and the Pensacola Operating Area off Alabama and Florida (aircraft carrier landing training, naval vessel shakedown testing, and live firing exercises). The Department of the Navy has endorsed the Proposed Program.

**Nonenergy Marine Minerals.** Several minerals in the north-central Gulf of Mexico have the potential to be developed. There are two existing producing sulphur operations on the OCS off Louisiana. Sand resources located in Federal waters in the Ship Shoal area off Louisiana are being considered for use in restoring barrier islands to protect the State's coastal wetlands. Sands in Federal and State waters off Mississippi and Alabama have the potential to be developed for glass production and for coastal restoration uses including beach replenishment.

### ***Atlantic Region***

**Commercial Fishing.** Commercial fishing is an important estuarine and marine activity along the eastern seaboard in the vicinity of the Mid-Atlantic program area. Although landings over the past 20 years have fluctuated annually, the general trend has been a decline in catches since peaking in the early 1980's. Important species of finfish include menhaden and croaker in nearshore waters and swordfish and tilefish farther offshore in the vicinity of submarine canyons. Significant shellfish include oysters, clams, quahogs, scallops, lobster, and blue crabs.



**Tourism and Recreation.** Tourism is a major industry in many Atlantic coastal counties—including those of New York, New Jersey, Delaware, and Maryland—the States located in the general vicinity of the area of the Mid-Atlantic program area. Some of the more popular beach vacation spots are the State beaches on Long Island in New York, Asbury Park and Atlantic City in New Jersey, the Delaware shore, and Fenwick Island and Ocean City in Maryland. These areas are enjoyed by the local populations and by numerous visitors from inland. Recreation activities include swimming, boating, sightseeing, sport fishing and other pursuits dependent on coastal and marine resources. Additional information relating to tourism and recreation in the Atlantic Region is available in the programmatic final EIS description of areas of special concern.

**Vessel Traffic.** The major ports in the vicinity of the Mid-Atlantic program area are New York and Philadelphia. Established vessel routing systems that have been sanctioned by the U.S. Coast Guard apply to the area south of Long Island extending to the Carolinas. The Delaware Bay and River port complex leading into Philadelphia is the site of most of the east coast's petroleum refining capacity and is a major transshipment point for petroleum and refined products.

**Areas of Special Concern.** Special areas in the general vicinity of the Mid-Atlantic program area include National Park Service units, National Wildlife Refuges, and National Estuarine Research Reserves. The Fire Island National Seashore and Gateway National Recreation Area are located on Long Island, and Assateague Island National Seashore extends from Maryland to Virginia. There are six National Wildlife Refuges in coastal New Jersey, five in Maryland, and nine in Virginia. National Estuarine Research Reserves are located in Delaware, Maryland, and Virginia. All of these areas are described in the programmatic final EIS.

**Military and NASA.** Areas used by the military include: the Narragansett Bay Operating Area, which extends south off Long Island; the Atlantic City Operating Area off New Jersey; the Patuxent River Operating Area off Delaware and Maryland; and the Virginia Capes Operating Area off Virginia. The NASA conducts rocket testing at Wallops Island, Virginia, that entails spent missiles and debris falling into the nearby ocean. The NASA stated that it has no environmental concerns about the Proposed Program but would like another opportunity to comment if the proposal is revised to include areas off the Mid-Atlantic and off California for leasing consideration.

**Nonenergy Marine Minerals.** Several Mid-Atlantic States and some Federal agencies are pursuing agreements with the MMS for the use of OCS sand resources for public works projects pursuant to October 1994 legislation amending section 8(k) of the OCS Lands Act (43 USC 1337). The OCS sand resources that would be used are located off New Jersey, Delaware, Maryland, and Virginia. There also is interest in commercial leasing and development of OCS sand and gravel off New Jersey for use in construction aggregate (on May 21, 1996, the MMS published in the *Federal Register* a Request for Interest and Nominations identifying 160 tracts for potential leasing consideration). In addition there might be potential for commercially developing placer deposits containing the mineral ilmenite that are located off New Jersey and Virginia.

## **Industry Interest**

Eleven oil and gas companies and two trade associations submitted comments that generally endorsed the Proposed Program lease sale schedule. Industry comments also focused on the Eastern Gulf of Mexico Planning Area, with many asking that more sales and a larger area be considered. Such comments ranged from requests for annual areawide leasing to recommendations for the adoption of Proposed Program Option 3(b). Industry comments also requested that the timing of proposed lease sales in the Beaufort Sea, Cook Inlet/Shelikof Strait, and Gulf of Alaska Planning Areas off Alaska be revised if sales in those areas that are scheduled in the 5-year program for 1992-1997 are delayed significantly or canceled.

As noted in previous decision documents prepared in the development of the 5-year program for 1997-2002, all of the areas that have been proposed for leasing are located adjacent or relatively close to State onshore and offshore areas where there is industry interest, existing infrastructure, or ongoing exploration and development activity. In a recent development concerning the Gulf of Alaska, one company is in the process of submitting an application to the State of Alaska that could involve directional drilling from land into State waters in that area.

All industry comments are summarized in appendix 1, and the key comments relating to specific areas under consideration for leasing are also cited in the discussions of options in part III.

## **Balancing Considerations**

Section 18(a)(3) requires that:

The Secretary shall select the timing and location of leasing, to the maximum extent practicable, so as to obtain a proper balance between the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone.

The OCS contains resources of many types, each with different kinds of value to the Nation. The challenge facing OCS program decisionmakers is to secure for the Nation the greatest overall value from these resources. Striking the balance among all the relevant factors is essentially a matter of judgment for which no ready formula exists. Section 18 of the OCS Lands Act recognizes this in requiring the consideration of a broad range of relevant factors rather than imposing an abstract formula. Some of those factors are covered in the cost-benefit analysis. However, while the social cost analysis attempts to quantify nonmarket values, factors such as aesthetics or special concern for marine mammals and endangered species are extremely difficult to translate into accurate economic estimates. Thus, the treatment of environmental factors in this decision document is supplemented by relevant EIS and other analyses that are incorporated by reference so that the Secretary has full and appropriate information on which to base his Proposed Final Program decision.

The U.S. Court of Appeals for the D.C. Circuit has elaborated on the statutory criteria for the balancing decision in great detail in its opinions on litigation concerning previous 5-year programs. Pertinent excerpts are presented below.

Concerning the weight of the three considerations under section 18(a)(3) the court has stated

That the Act has an objective—the expeditious development of OCS resources—persuades us to reject petitioners' view that the three elements in section 18(a)(3) are "equally important" and that no factor is "inherently more important than another." The environmental and coastal zone considerations are undoubtedly important, but the Act does not require they receive a weight equal to that of potential oil and gas discovery. A balancing of factors is not the same as treating all factors equally. The obligation instead is to look at all factors and then balance the results. The Act does not mandate any particular balance, but vests the Secretary with discretion to weigh the elements so as to "best meet national energy needs." The weight of these elements may well shift with changes in technology, in environment, and in the Nation's energy needs, meaning that the proper balance for 1980-85 may differ from the proper balance for some subsequent five-year period. (*California I*, 668 F.2d, p.1317.)

Concerning the nature of analysis of the section 18 factors and the Secretary's discretion in weighing the analytic results, the court has said

The Act recognized the difficult burden the Secretary must shoulder by stating that the selection of timing and location of leasing must strike the proper balance "to the maximum extent practicable." The Secretary must evaluate oil and gas potential, which can be quantified in monetary terms, in conjunction with environmental and social costs, which do not always lend themselves to direct measurement. Because of this, they must be considered in qualitative as well as quantitative terms. (*California I*, 668 F.2d, p. 1317.)

In deciding whether to include an area, the Secretary weighed qualitative factors as well as quantitative factors. The Secretary listed among qualitative factors "national security, industry interest, and equitable sharing of development costs and benefits." OCSLA specifically directs the Secretary to weigh such qualitative factors in his balance.

Taking qualitative factors into account implies that the inclusion of areas with a calculated net social value of zero may nonetheless be compatible with section 18(a)(3). (*NRDC*, 865 F.2d, p. 307.)

The Secretary must make a good-faith effort to balance environmental and economic interests. So long as he proceeds reasonably, however, his decisions warrant our respect. (*NRDC*, 865 F.2d, p. 308-309.)

**D. Analysis of Assurance of Fair Market Value**

The 5-year program includes general provisions for the receipt of fair market value in accordance with section 18(a)(4) that pertain to (1) a minimum bid requirement and (2) a process for reviewing the adequacy of bids received for OCS oil and gas leases. In addition to the minimum bid requirement and bid adequacy process the MMS establishes lease terms and conditions to assure the receipt of fair market value. Those more

specific measures are designed and implemented based on ongoing reviews and evaluations that are independent of the 5-year program preparation process.

The approved 5-year program for 1992-1997 set the minimum bid level at \$25 per acre, subject to sale-by-sale reconsideration and continued use of a two-phase bid adequacy review process. A full description of that process is presented in appendix 10 of the April 1992 SID. A brief discussion is presented below, and the technical terms that are used are defined in figure 3.

The MMS process of determining bid adequacy has two phases. In Phase 1 of the process, high bids are accepted on tracts judged to contain insufficient resources to be economically viable. High bids on all drainage and development tracts and on other tracts not accepted in Phase 1 move to Phase 2. Phase 2 uses an independent government evaluation and bid adequacy rules based on the Mean Range of Values (MROV), Delayed Mean Range of Values (DROV), Adjusted Delayed Value (ADV), and Geometric Average Evaluation of the Tract (GAEOT). In addition to these criteria the high bids on certain tracts are analyzed based on other pertinent costs relating to delays in reoffering. In Phase 2, if the high bid equals or exceeds the estimated value for an individual tract, it is accepted. Phase 2 allows the MMS an opportunity to compare its valuation with that of the high bidder.

The Call for Comment on Proposed Policy Options that the MMS published in the *Federal Register* on April 20, 1995, included options relating to the minimum bid level and to procedures for determining bid adequacy. Among the latter were options that would eliminate or restrict use of the three-bid rule and replace the GAEOT with alternative parameters. A brief summary of the responses to the Call for Comment is available in the decision document for the Proposed Program for 1997-2002. A summary of the comments received on the *Federal Register* Notice of February 7, 1996, announcing the Proposed Program, is presented in part III.B above.

The MMS eliminated the three-bid rule and is continuing to study the GAEOT to consider whether it should be modified or eliminated. Under the three-bid rule the highest of three or more qualified bids on any wildcat or confirmed tract would automatically be accepted in Phase I of the bid adequacy process. The three-bid rule was eliminated to allow the MMS to perform a full evaluation on all multibid tracts—which tend to have greater resources—rather than to base acceptance of the high bids on some wildcat and confirmed tracts solely on the number of bids received. Depending on the results of further MMS analysis, additional options for assuring fair market value might be developed for presale decisions after the 5-year program for 1997-2002 is approved.

In addition the MMS is conducting analyses related to enactment of The OCS Deep Water Royalty Relief Act, which is described in part III.B of the decision document for the Proposed Program. The results of those analyses could lead to some revisions of policies and procedures pertaining to the assurance of receipt of fair market value.

## **E. Appropriations and Staffing**

Section 18(b) of the OCS Lands Act, as amended, requires that the 5-year program include estimates of the appropriations and staff that will be needed to:

- C Obtain information for preparing the 5-year program;

- © Analyze and interpret data and information compiled under the authority of the statute;
- © Conduct environmental studies and prepare EIS's pursuant to NEPA; and
- © Supervise operations conducted pursuant to the leases issued.

Estimated appropriations and staffing requirements for the 5-year program for 1997-2002 are presented in appendix 3. The estimates are based on the schedule of lease sales adopted in the Proposed Program (February 1996).

**Adjusted Delayed Value (ADV):** The minimum of the MROV and the DMROV.

**Confirmed Tract:** A previously leased tract having a well(s) that encountered hydrocarbons and may have produced. It contains some oil or gas resources whose volume may or may not be known.

**Delayed Mean Range of Values (DMROV):** A measure of the smallest high bid needed to generate bonus and expected royalty receipts from the current sale that are at least equal to the discounted sum of the bonus and royalties expected from leasing the tract in the next sale. The bonus for the next sale is computed as the MROV under the projected economic, engineering, and geological conditions, including drainage, associated with delay in leasing.

**Development Tract:** A tract that has nearby productive (past or currently capable) wells with indicated hydrocarbons and that is not interpreted to have a productive reservoir extending under the tract. There should be evidence supporting the interpretation that at least part of the tract is on the same general structure as the proven productive well.

**Drainage Tract:** A tract that has a nearby well capable of producing oil or gas, and the tract could incur drainage if and when such a well is placed on production. The reservoir from which the nearby well is capable of producing is interpreted to extend under the drainage tract to some extent.

**Geometric Average Evaluation of the Tract (GAEOT):** The geometric mean of the bids and the MROV, with anomalous bids excluded. This parameter is calculated as the root of 1 plus the number of bids of the product of all the nonanomalous high bids and the MROV. For example, if the high bids were \$1,419,700, \$228,500, and \$144,000, while the MROV was \$ 15,000,000, this parameter would be calculated as follows:  $GAEOT = (1419700 \times 228500 \times 144000 \times 15000000)^{1/4} = \$914,938$ . The high bid on this tract would be accepted, because it exceeds the GAEOT. However, if the bids on the tract were \$2,937,000, \$2,626,000, and \$2,574,000, the GAEOT would be:  $GAEOT = (2937000 \times 2626000 \times 2574000 \times 15000000)^{1/4} = \$4,154,078$ . In this case the high bid would be rejected, because it is lower than the GAEOT. The MROV would have to drop below \$3,748,078 for the GAEOT to fall below the high bid and for the bid to be accepted.

**Mean Range of Values (MROV):** A tract's expected private present value, given that the tract is leased in the present sale.

**Wildcat Tract:** A tract that has neither nearby productive wells, nor is interpreted to have a productive reservoir extending under the tract. It has high risk in addition to sparse well control.

**Figure 3.** Definition of Terms Used in the Fair Market Value Analysis

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